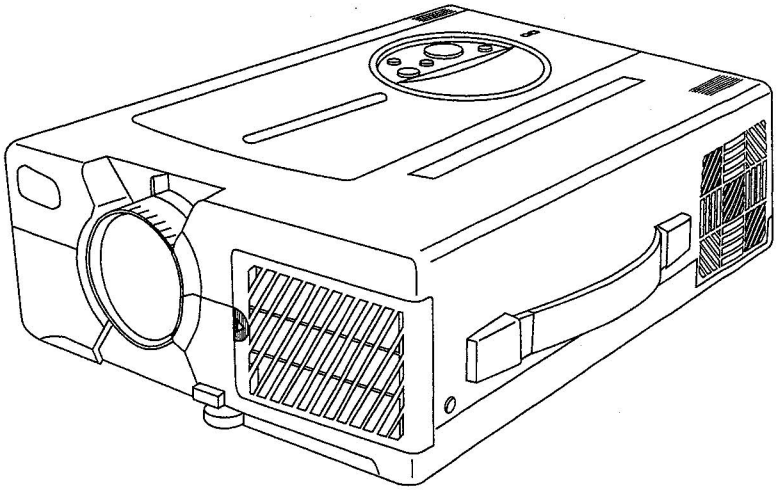
HITACHI

SERVICE MANUAL

YK | No. 0494E

CP-X935W
CP-X935E



Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Hitachi liquid crystal projector. Be sure to read cautionary items described in the manual to maintain safety before servicing.

Service Warning

1. When replace the lamp, to avoid burns to your fingers. The lamp becomes too hot.
2. Never touch the lamp bulb with a finger or anything else. Never drop it or give it a shock. They may cause bursting of the bulb.
3. This projector is provided with a high voltage circuit for the lamp. Do not touch the electric parts of power unit (main), when turn on the projector.
4. Do not touch the exhaust fan, during operation.
5. The LCD module ass'y is likely to be damaged. If replacing to the LCD module ass'y, do not hold the FPC of the LCD module ass'y.

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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

Liquid Crystal Projector

March 1999 Image & Information Media Systems Division Yokohama Operation

1. Features

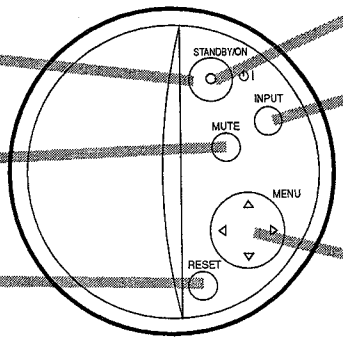
- High brightness, High resolution
- Compact size, light weight for portability
- RGB output terminal
- RS232C Communication
- Mouse emulation
- Power zoom and power focus functions
- Complies with VESA DDC1/2B specifications
- Auto-adjustment function

2. Specifications

Liquid crystal panel	Drive system	TFT active matrix
	Panel size	0.9 inches
	Number of pixels	1024 (H) x 768 (V)
Lamp		UHP lamp 120W
Video input	System	NTSC , 4.43NTSC , PAL , M-PAL , or SECAM (N-PAL : only compulsion mode)
	Level	Composite 1.0Vp-p (75Ω termination) Y/C Y : 1.0Vp-p (75Ω termination) C : 0.286Vp-p (NTSC burst signal, 75Ω termination) 0.3Vp-p (PAL/SECAM burst signal, 75Ω termination)
RGB input / output	Video signal	Analog RGB input 0.7Vp-p (75Ω termination)
	Sync signal	H/V separate TTL level
Audio	Input	200mVrms, 20kΩ or less
	Output	0~200mVrms, 1kΩ
Speaker output		1W + 1W (stereo)
Power supply		AC100~120V/2.3A,AC220~240V/1.2A (50/60Hz)
Power consumption		200W
Dimensions		248 (W) x 106 (H) x 336 (D) mm
Weight		4.5kg
Temperature range		Operation : 0~35°C Storage : -20~60°C
Accessories		Remote control ·····1 RGB cable ·····1 POWER cord ·····3(CP-X935W) Mac adapter ·····1 2(CP-X935E) Video/Audio cable ·····1 BATTERIES LR6 ·····2 Mouse cable ·····3

3. Names of each part

●Main unit



ON indicator
This blinks in the standby mode and lights in the operation mode.

STANDBY / ON button
Power ON/OFF button.
OFF sets the unit in standby mode.

INPUT button
To select the input source.
Each time this button is pressed, the input source is changed in sequence as shown below.

RGB1 → RGB2 → VIDEO

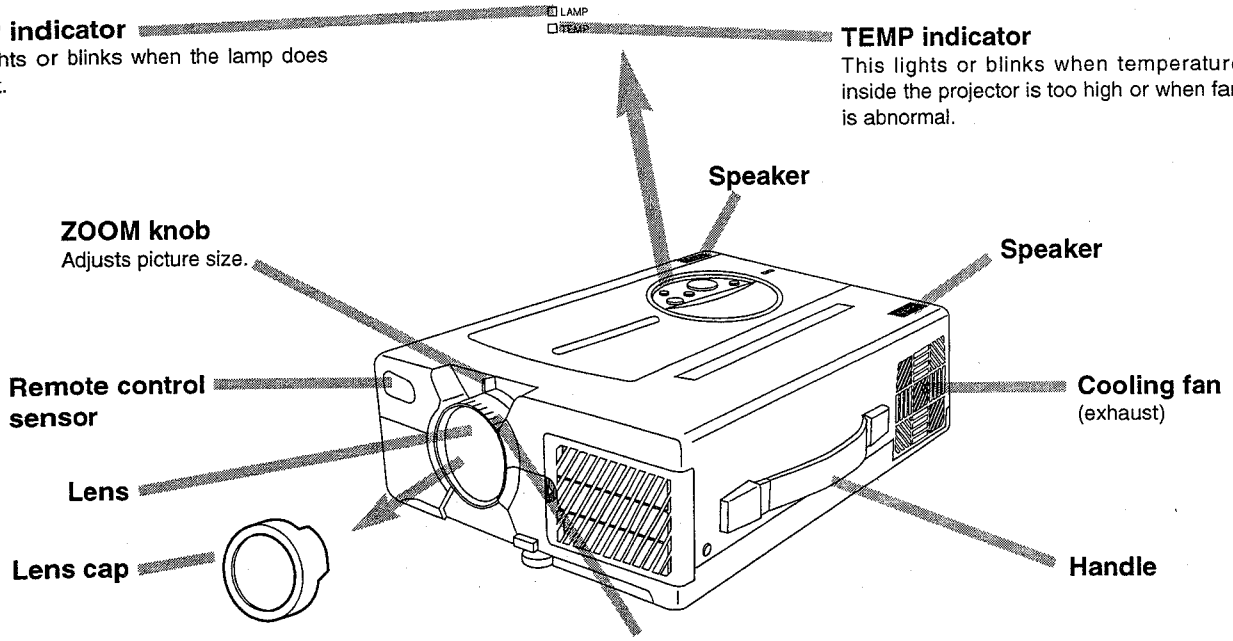
MUTE button
Silences the sound. (Cancels the mute when the unit is set in mute mode.)

RESET button
Resets unit to factory settings.

MENU button
Picture adjustments.

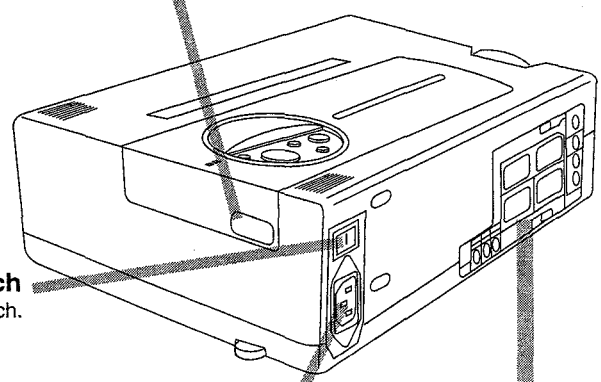
LAMP indicator
This lights or blinks when the lamp does not light.

TEMP indicator
This lights or blinks when temperature inside the projector is too high or when fan is abnormal.



- Use the remote control transmitter within the range of about 16 feet from the remote control sensor and within 30° to both the left and right.

Remote control sensor



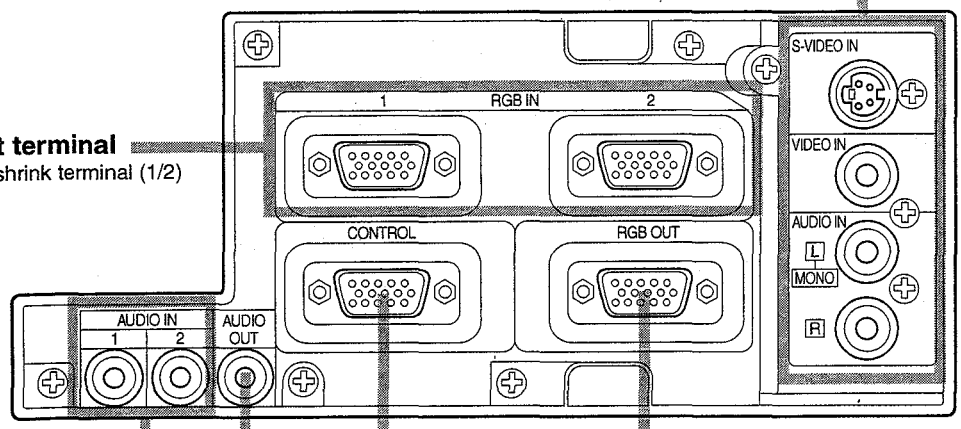
MAIN POWER switch
Main power ON/OFF switch.
O: OFF
I : ON

AC IN socket
Connect the provided power cord.

VIDEO input terminal
(on video-equipped models only)

S-VIDEO input terminal
Mini DIN 4pin connector
VIDEO input terminal
RCA Jack
AUDIO L/R input terminal
RCA Jack

RGB input terminal
D-sub 15pin shrink terminal (1/2)



CONTROL terminal
D-sub 15pin shrink terminal

AUDIO output terminal (RGB/VIDEO)
Stereo mini jack

AUDIO input terminal
Stereo mini jack (1/2)

RGB output terminal
D-sub 15pin shrink terminal
RGB output can be displayed even in the standby mode.

Remote control transmitter

STANDBY / ON button
Power ON/OFF button.
OFF sets the unit in standby mode.

FREEZE Button
Pressing this button displays a still picture (by freezing).

MAGNIFY button
Pressing this button partially magnifies a displayed picture.

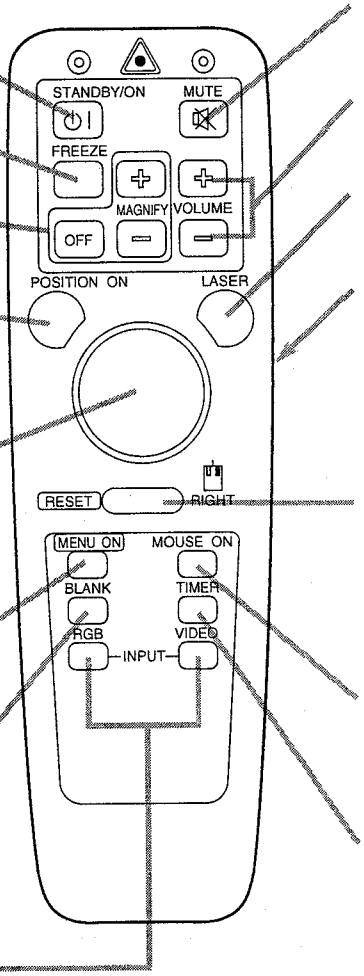
POSITION button
Moves the picture by DISK PAD after pressed the POSITION ON button.
(Only RGB signal input)
While the back light on, you can operate POSITION.

DISK PAD
① When the back light of MENU ON button on, selects or adjusts the menu item.
② When removes the on-screen menus, works as mouse.
③ When the back light of the POSITION ON button on, moves picture.

MENU ON button
Displays the on-screen menus.
And back light on.
While the back light on, you can operate MENU.

BLANK ON button
① The blank screen which is displayed by pressing BLANK.
② And the blank screen will be revealed down by pressing BLANK again.

INPUT SELECT button
Selects the input source.

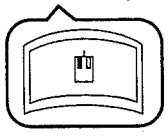


MUTE button
Silences the sound. (Cancels the mute when the unit is set in mute mode.)

VOLUME button
Adjusts volume. The sound is loud or low while pressing the "+" or "-" button.

LASER button
Laser pointer ON button. Use as a stick (for indication).

MOUSE LEFT button
Mouse left button is the left click of the mouse. (bottom button)



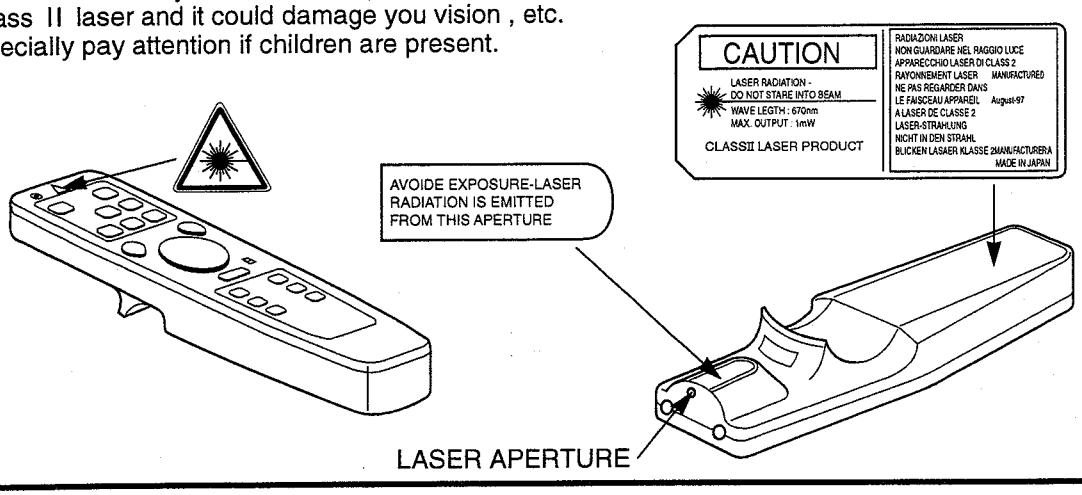
RESET / RIGHT button
When displays the on-screen menus, resets the menu item to factory settings.
When operates the mouse emulation, works as right click of mouse in computer mode.
After moving the picture (POSITION ON), resets the position to factory settings.

MOUSE ON button
Mouse emulation mode starts.
When menu are open or blank screen is displayed or icon of position is displayed, there are stopped and back light off.

TIMER ON / OFF button
Displays the setting time by count down.

⚠ Caution Cautions on use of the laser pointer.

- The laser pointer on the remote control unit radiates the laser beam from the laser aperture.
- This laser pointer used as a stick (for indication).
  Do not stare directly into the laser aperture or radiate the laser beam to other persons as the laser emitted is a class II laser and it could damage you vision , etc.
  Especially pay attention if children are present.



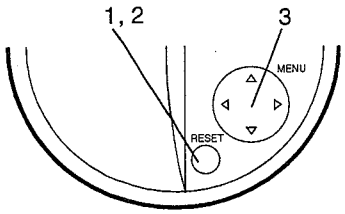
Function for service

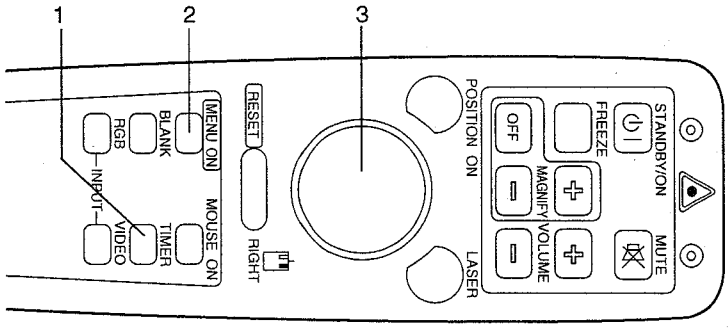
Function	Operation
Displayed the operating time of the lamp	Press the RESET button of the projector or the TIMER button of the remote control, for 3 seconds.
Reset the operating time of the lamp	Press the RESET button of the projector or the remote control MENU, for 3 seconds. (During be displayed the operating time of the lamp.)
Displayed the operating time of the projector	Press the MUTE button of the projector or the remote control, for 3 seconds. (During be displayed the operating time of the lamp.)

When replacing the lamp, Reset the operating time of lamp.

Reset the lamp timer :

Please carry out the following operation within 10 minutes from power on, if you replaced the lamp after 2,000 hours.





1) Press the RESET button on projector for 3 seconds or remote control TIMER button for 3 seconds and display the total lamp used time.
2) Press the RESET button on projector or remote control MENU ON button during displaying the lamp used time.
3) Select the "0" on the screen using the MENU (◀) button or DISK PAD.

LAMP 1700 hr

LAMP 1700 □→0 ■CANCEL

Message table

On-screen display

The following messages are displayed on the screen.

"CHANGE THE LAMP" "AFTER REPLACING LAMP, RESET THE LAMP TIMER"	Lamp has 1,700 hours on it and may need to be changed.
"CHANGE THE LAMP" "AFTER REPLACING LAMP, RESET THE LAMP TIMER" "THE POWER WILL TURN OFF AFTER 20 Hr."	Lamp has 1,979 hours on it. See P.6 "Reset the lamp timer"
Blinking of "CHANGE THE LAMP" "AFTER REPLACING LAMP, RESET THE LAMP TIMER" "THE POWER WILL TURN OFF AFTER 0 Hr."	When the lamp has 2,000 hours or more on it, the message will blink, and the power will turns off after 10 minutes.
"NO INPUT IS DETECTED"	Signal is not input.
"SYNC IS OUT OF RANGE"	The horizontal or vertical frequency of the input signal exceeds the range of the projector, it cannot be displayed.

Indicator display

The ON indicator, LAMP indicator and TEMP indicator will light or blink in the following cases.

ON indicator	LAMP indicator	TEMP indicator	Meaning	Remedy
Lights orange	Goes off	Goes off	Standby mode	————
Blinks green	Goes off	Goes off	During warming up	————
Lights green	Goes off	Goes off	During operation	————
Blinks orange	Goes off	Goes off	During cooling down	————
Lights red	Lights red	Goes off	Lamp cannot light	Cool projector by power off for 60 minutes. If the indicator is still lit, lamp may be defective. Replace.
Lights red	Blinks red	Goes off	Lamp is not inserted	Securely insert the lamp.
Lights red	Goes off	Blinks red	Cooling fan accidented	Replace fan.
Blinks red	Blinks red	Goes off	Accumulated lamp operation time has exceeded 2,000 hours	Replace lamp and reset the accumulated lamp operation time.

When inside temperature becomes high, to protect the projector, the lamp may be turned off and the lamp indicator lights red, or the projector will be shut down and the all indicator display goes off.

4. Adjustment

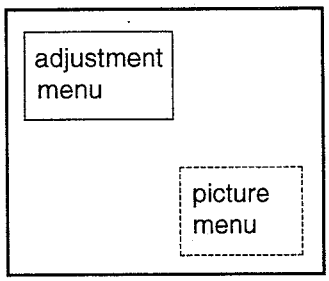
4 - 1 Adjustment menu

All adjustments are controlled on the adjustment menu.

How to set up adjustment menu is following;

a. Push menu button

b. Keep Reset button pushing for 5 sec. or more at displaying menu.



4 - 2 White balance adjustment

Preparations for adjustment

1. Setting of condition

①Apply heat-running for 10 minutes or more before adjustment.

②Project 40 inches size image with zoom set to the widest.

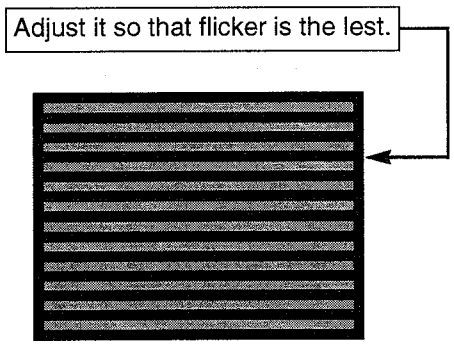
③Press the RESET button of the remote control transmitter to set picture adjustment to NORMAL.

④Set "BLACK2 POSI R", "BLACK2 POSI G" and "BLACK2 POSI B" in the adjustment menu to "25".

2. Adjustment flicker.

Refer to the attached drawing.

①Input horizontal gray line (gray/black) signal with a timing signal of XGA VESA(60).
Adjust "V.COM W" so that flicker is the lest.



Adjustment Procedure

3. Adjustment of color uniformity

①Input gray pattern at 0.35Vpp with a timing signal of XGA VESA(60).

②Select "SWITCH OFF" in "C. UNIFORMITY" of the adjustment menu.

③Check the color uniformity of image.

④Continue this adjustment when color uniformity is not good.

⑤Select "SWITCH ON" in "C. UNIFORMITY" of the adjustment menu.

⑥Input yellow pattern at 0.35Vpp with a timing signal of XGA VESA(60).

⑦Adjust "C. UNIFORMITY - H - R -RP" so that color balance of left and right side is best,....visual check. This is control correction wave for Horizontal Saw.

⑧Adjust "C. UNIFORMITY - H - R -PB" so that color balance of center and side is best,....visual check. This is control correction wave for Horizontal Parabola.

⑨Input cyan pattern at 0.35Vpp with a timing signal of XGA VESA(60).

⑩Adjust "C. UNIFORMITY - H - B -RP" so that color balance of left and right side is best,....visual check. This is control correction wave for Horizontal Saw.

⑪Adjust "C. UNIFORMITY - H - B -PB" so that color balance of center and side is best,....visual check. This is control correction wave for Horizontal Parabola.

⑫Adjust "C. UNIFORMITY - V - B -RP" so that color balance of top and bottom is best,....visual check. This is control correction wave for Vertical Saw.

"C. UNIFORMITY - H - R -RP"
: horizontal correction for R horizontal Saw
"C. UNIFORMITY - H - R -PB"
: horizontal correction for R horizontal Parabola
"C. UNIFORMITY - H - B -RP"
: horizontal correction for B horizontal Saw
"C. UNIFORMITY - H - B -PR"
: horizontal correction for B horizontal Parabola
"C. UNIFORMITY - V - B -RP"
: vertical correction for B vertical Saw

4. Adjustment of white balance.

①Input 16 steps monochrome green at 0.7Vpp with a timing signal of XGA VESA(60).

②Adjust "SUB CONTRAST W" and "SUB BRIGHT W" so that brightness of 16 steps is best,....visual check.

③a. Input gray pattern at 0.21Vpp with a timing signal of XGA VESA(60).

b. Adjust "SUB BRIGHT R" and "SUB BRIGHT B" so that the chromaticity at the center of the picture is x=0.28±0.005,y=0.34±0.005(low-brightness white balance)

④a. Input gray pattern at 0.52Vpp with a timing signal of XGA VESA(60).

b. Adjust "SUB CONTRAST R" and "SUB CONTRAST B" so that the chromaticity at the center of the picture is x=0.28±0.005,y=0.345±0.005(middle-brightness white balance)

⑤Check low-brightness white balance by returning to ③, and repeat ③ to ④ to clear both middle-brightness and low-brightness white balance.

⑥a. Input gray pattern at 0.07Vpp with a timing signal of XGA VESA(60).

b. Adjust "BLACK POSI R" and "BLACK POSI B" so that the chromaticity at the center of the picture is x=0.27±0.005,y=0.34±0.005.

⑦Check low-brightness white balance by returning to ③.

note When majoring and adjustment using Minolta CL-100.

4 - 3 Ghost adjustment

Preparations for adjustment

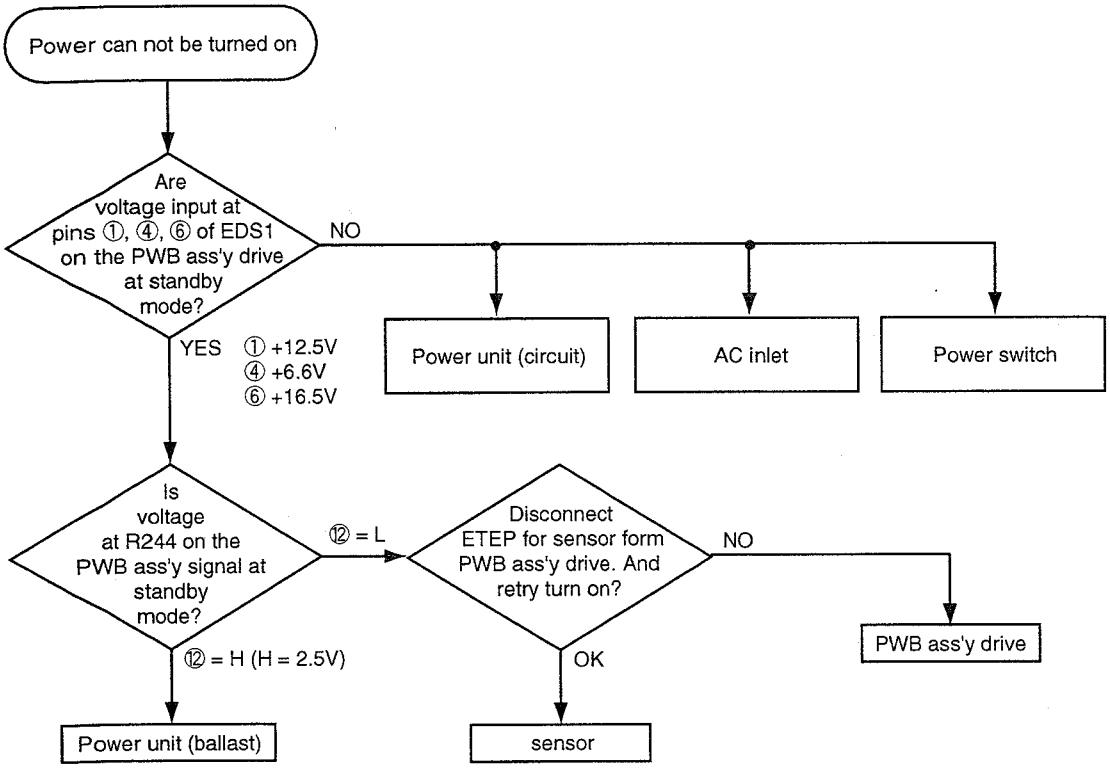
①Input across-hatch signal at 0.7Vpp with a timing signal of XGA VESA(60).

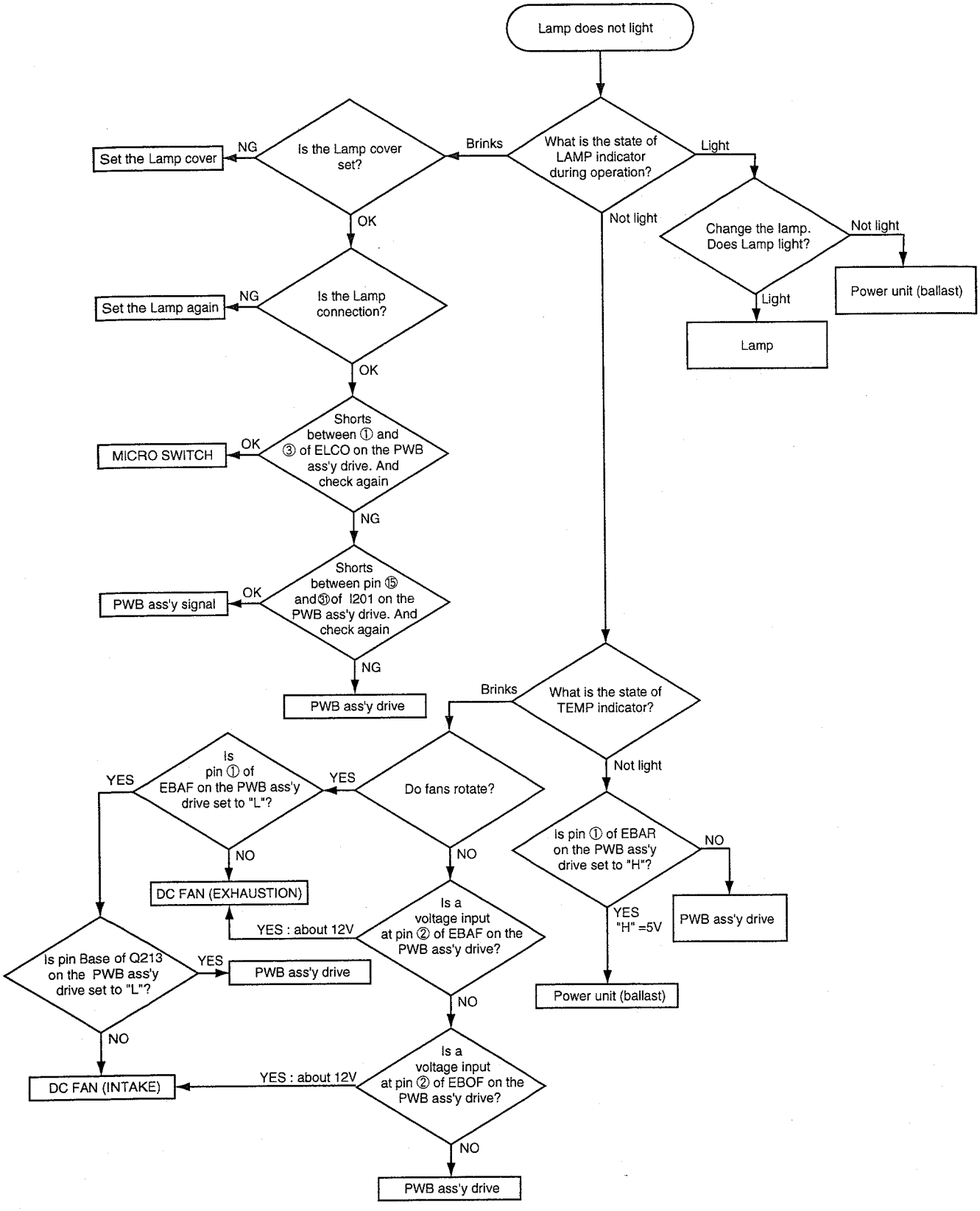
②Adjust "H.PHASE" in the picture menu so that the vertical lines of cross-hatch pattern are seen most clear.

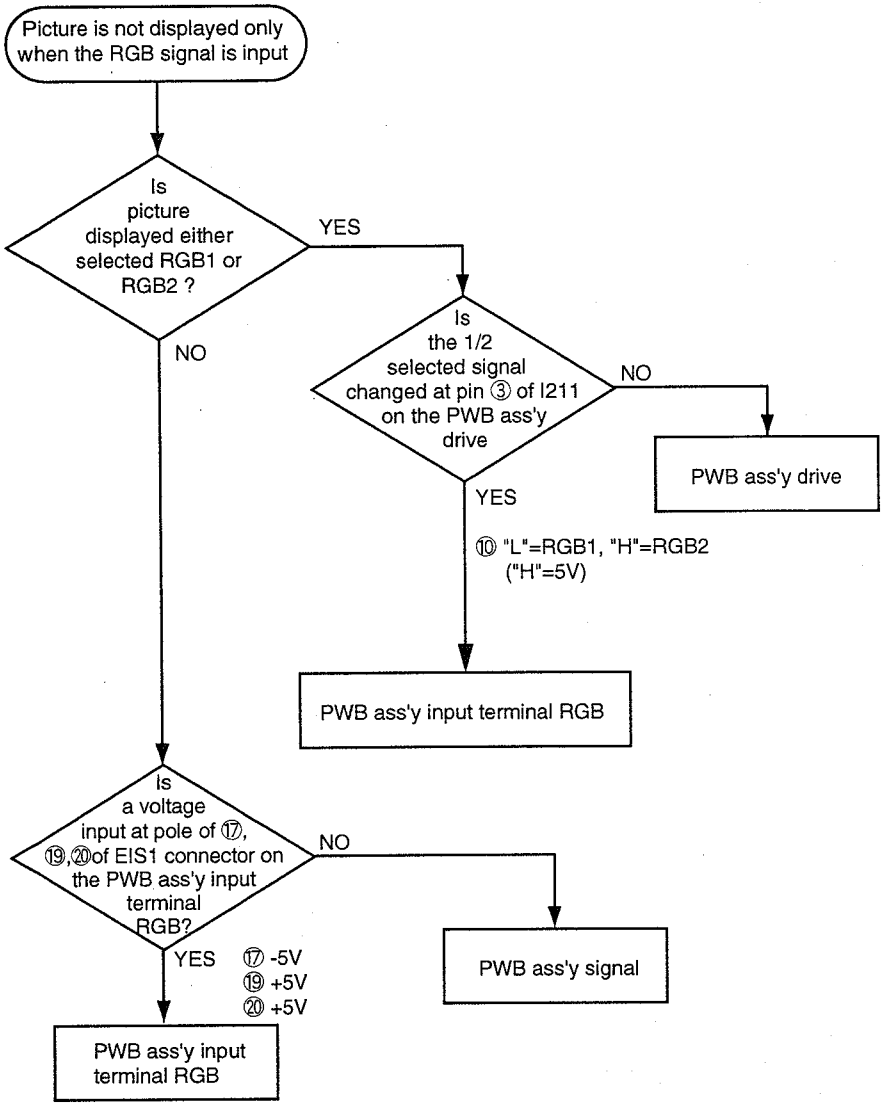
Adjustment procedure

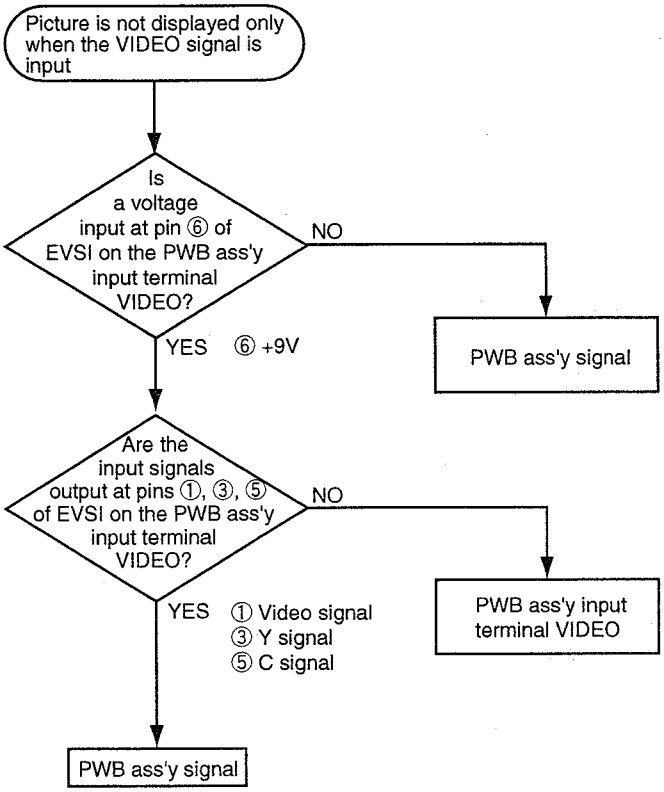
Input character signal at 0.7Vpp and adjust "GHOST" in the adjustment menu so that the best at ghost.

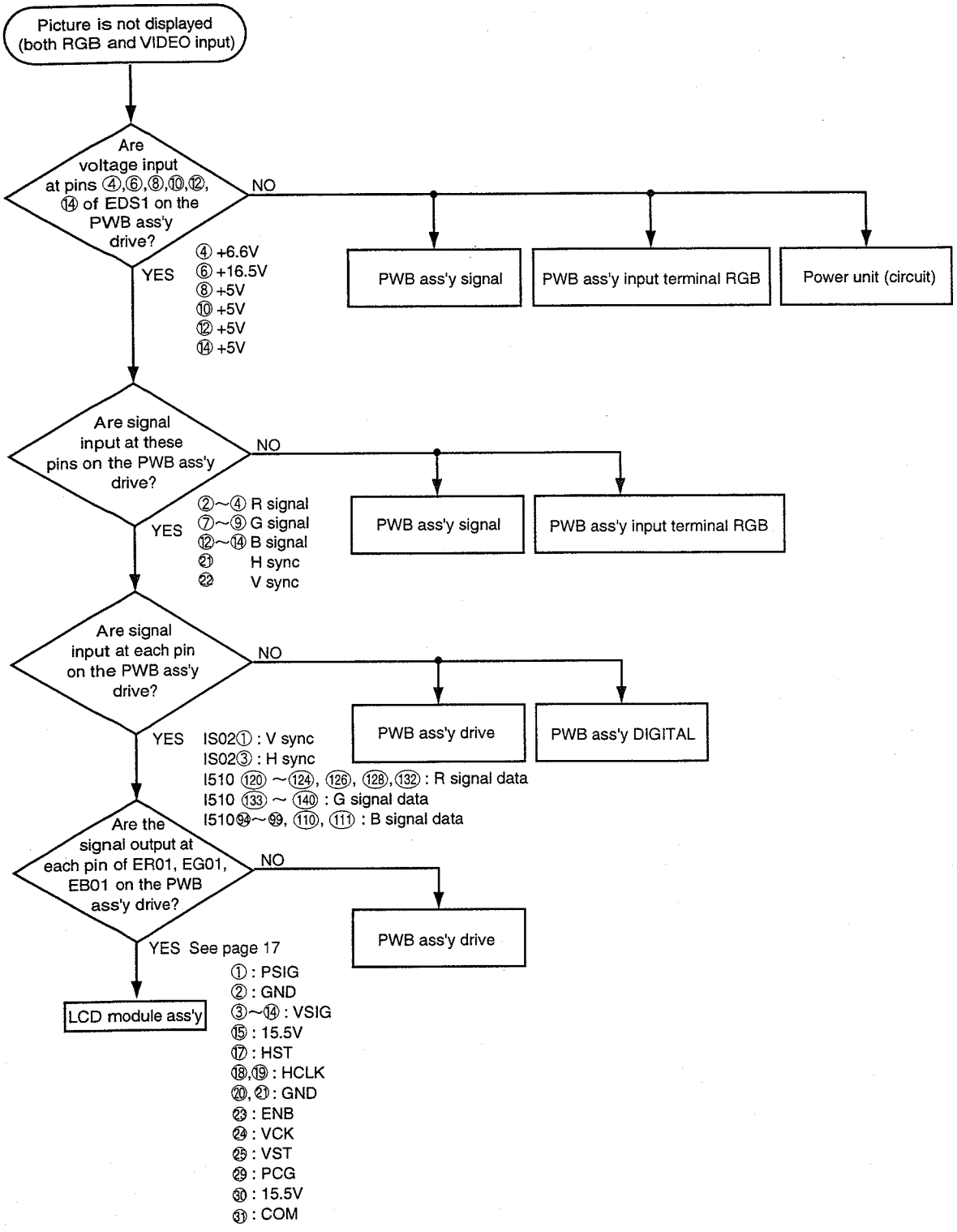
5. Troubleshooting

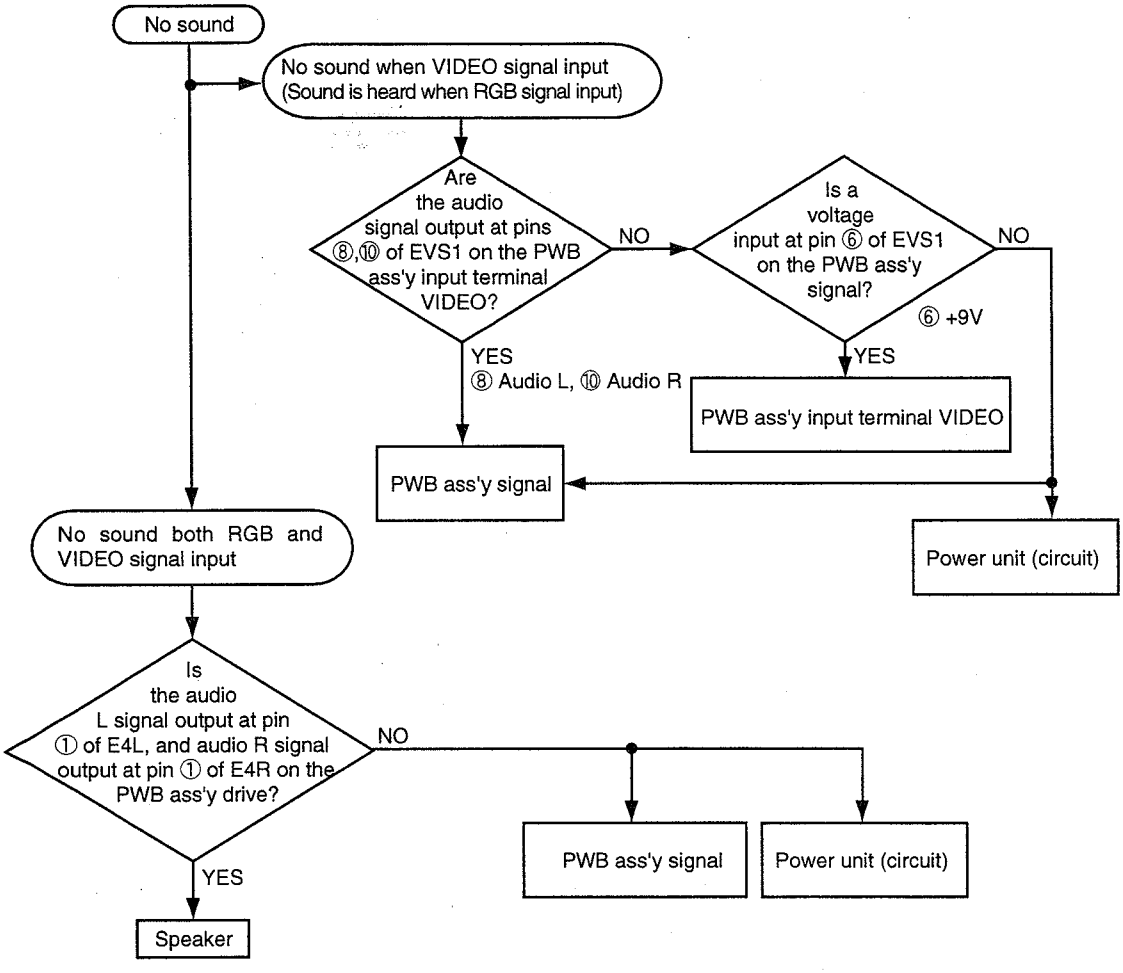

Power can not be turned on
Are voltage input at pins ①, ④, ⑥ of EDS1 on the PWB ass'y drive at standby mode?
NO
YES
① +12.5V
④ +6.6V
⑥ +16.5V
Power unit (circuit)
AC inlet
Power switch
Is voltage at R244 on the PWB ass'y signal at standby mode?
⑫ = L
Disconnect ETEP for sensor form PWB ass'y drive. And retry turn on?
NO
PWB ass'y drive
⑫ = H (H = 2.5V)
OK
Power unit (ballast)
sensor

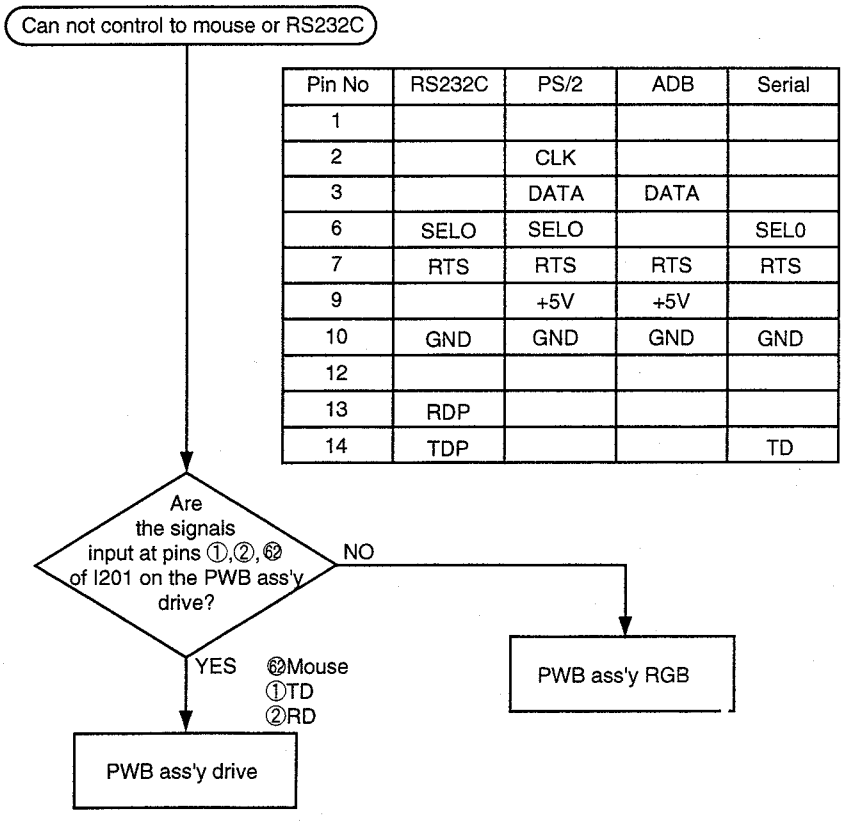

Lamp does not light
What is the state of LAMP indicator during operation?
Brinks
Light
Not light
Is the Lamp cover set?
NG
Set the Lamp cover
OK
Change the lamp. Does Lamp light?
Not light
Power unit (ballast)
Light
Lamp
Is the Lamp connection?
NG
Set the Lamp again
OK
Shorts between ① and ③ of ELCO on the PWB ass'y drive. And check again
OK
MICRO SWITCH
NG
Shorts between pin ⑮ and㉛of I201 on the PWB ass'y drive. And check again
OK
PWB ass'y signal
NG
PWB ass'y drive
What is the state of TEMP indicator?
Brinks
Not light
Do fans rotate?
YES
Is pin ① of EBAF on the PWB ass'y drive set to "L"?
YES
NO
NO
DC FAN (EXHAUSTION)
Is a voltage input at pin ② of EBAF on the PWB ass'y drive?
YES : about 12V
Is pin ① of EBAR on the PWB ass'y drive set to "H"?
NO
YES "H" =5V
PWB ass'y drive
Power unit (ballast)
Is pin Base of Q213 on the PWB ass'y drive set to "L"?
YES
PWB ass'y drive
NO
DC FAN (INTAKE)
YES : about 12V
Is a voltage input at pin ② of EBOF on the PWB ass'y drive?
NO
PWB ass'y drive


Picture is not displayed only when the RGB signal is input
Is picture displayed either selected RGB1 or RGB2 ?
YES
NO
Is the 1/2 selected signal changed at pin ③ of I211 on the PWB ass'y drive
NO
PWB ass'y drive
YES
⑩ "L"=RGB1, "H"=RGB2 ("H"=5V)
PWB ass'y input terminal RGB
Is a voltage input at pole of ⑰, ⑲,⑳of EIS1 connector on the PWB ass'y input terminal RGB?
NO
PWB ass'y signal
YES
⑰ -5V
⑲ +5V
⑳ +5V
PWB ass'y input terminal RGB


Picture is not displayed only when the VIDEO signal is input
Is a voltage input at pin ⑥ of EVSI on the PWB ass'y input terminal VIDEO?
NO
PWB ass'y signal
YES ⑥ +9V
Are the input signals output at pins ①, ③, ⑤ of EVSI on the PWB ass'y input terminal VIDEO?
NO
PWB ass'y input terminal VIDEO
YES ① Video signal
③ Y signal
⑤ C signal
PWB ass'y signal


Picture is not displayed (both RGB and VIDEO input)
Are voltage input at pins ④,⑥,⑧,⑩,⑫, ⑭ of EDS1 on the PWB ass'y drive?
NO
YES
④ +6.6V
⑥ +16.5V
⑧ +5V
⑩ +5V
⑫ +5V
⑭ +5V
PWB ass'y signal
PWB ass'y input terminal RGB
Power unit (circuit)
Are signal input at these pins on the PWB ass'y drive?
NO
YES
②~④ R signal
⑦~⑨ G signal
⑫~⑭ B signal
㉑ H sync
㉒ V sync
PWB ass'y signal
PWB ass'y input terminal RGB
Are signal input at each pin on the PWB ass'y drive?
NO
YES
IS02① : V sync
IS02③ : H sync
I510 (120) ~(124), (126), (128),(132) : R signal data
I510 (133) ~ (140) : G signal data
I510㉞~㊾, (110), (111) : B signal data
PWB ass'y drive
PWB ass'y DIGITAL
Are the signal output at each pin of ER01, EG01, EB01 on the PWB ass'y drive?
NO
YES See page 17
PWB ass'y drive
LCD module ass'y
① : PSIG
② : GND
③~⑭ : VSIG
⑮ : 15.5V
⑰ : HST
⑱,⑲ : HCLK
⑳, ㉑ : GND
㉓ : ENB
㉔ : VCK
㉕ : VST
㉙ : PCG
㉚ : 15.5V
㉛ : COM

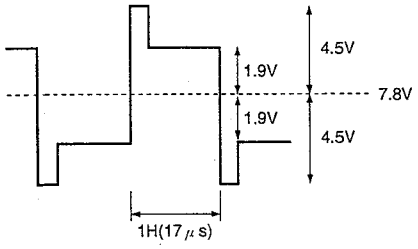

No sound
No sound when VIDEO signal input
(Sound is heard when RGB signal input)
Are the audio signal output at pins ⑧,⑩ of EVS1 on the PWB ass'y input terminal VIDEO?
NO
Is a voltage input at pin ⑥ of EVS1 on the PWB ass'y signal?
NO
⑥ +9V
YES
⑧ Audio L, ⑩ Audio R
YES
PWB ass'y input terminal VIDEO
PWB ass'y signal
Power unit (circuit)
No sound both RGB and VIDEO signal input
Is the audio L signal output at pin ① of E4L, and audio R signal output at pin ① of E4R on the PWB ass'y drive?
NO
PWB ass'y signal
Power unit (circuit)
YES
Speaker


Can not control to mouse or RS232C
Are the signals input at pins ①,②,⑫ of I201 on the PWB ass'y drive?
NO
YES ⑫Mouse
①TD
②RD
PWB ass'y RGB
PWB ass'y drive

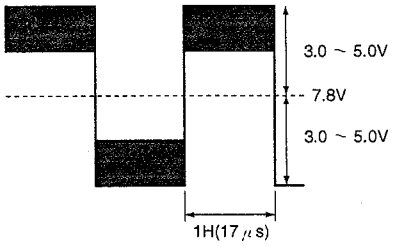
Pin No	RS232C	PS/2	ADB	Serial
1				
2		CLK		
3		DATA	DATA	
6	SELO	SELO		SEL0
7	RTS	RTS	RTS	RTS
9		+5V	+5V	
10	GND	GND	GND	GND
12				
13	RDP			
14	TDP			TD

Signal waveforms of P701, P801 and P901 (Input signal is VGA3)

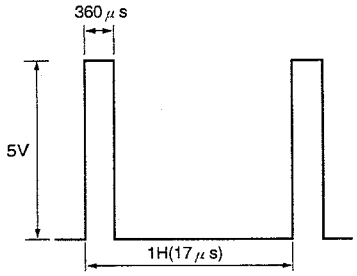
① PSIG (Uniformity Signal)



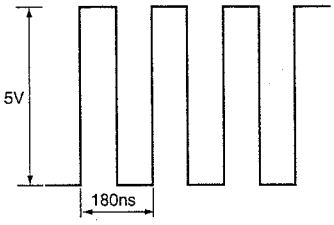
③~⑭ VIDEO SIGNAL



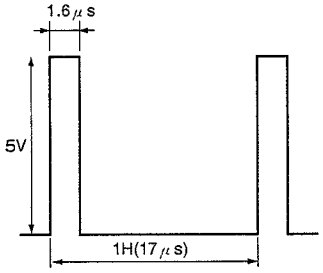
⑰ HST



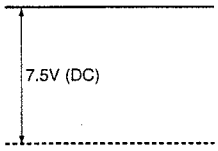
⑱,⑲ HCK1,HCK2



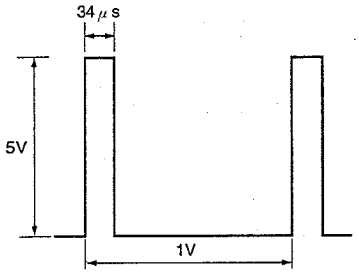
㉙ PCG



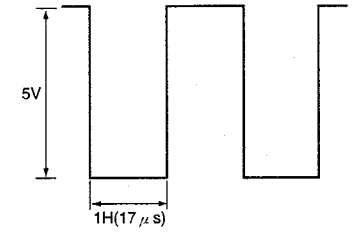
㉛ COM



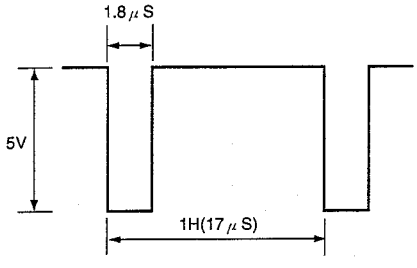
㉕ VST



㉔ VCK



㉓ ENB

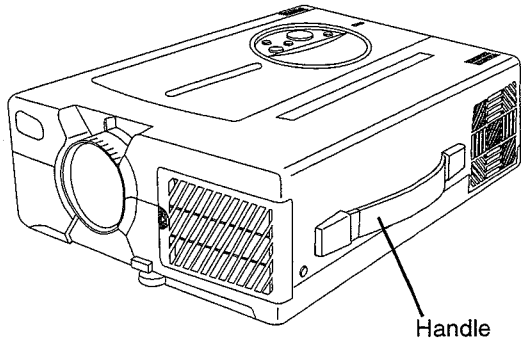


6. Service points

6 - 1 POINT

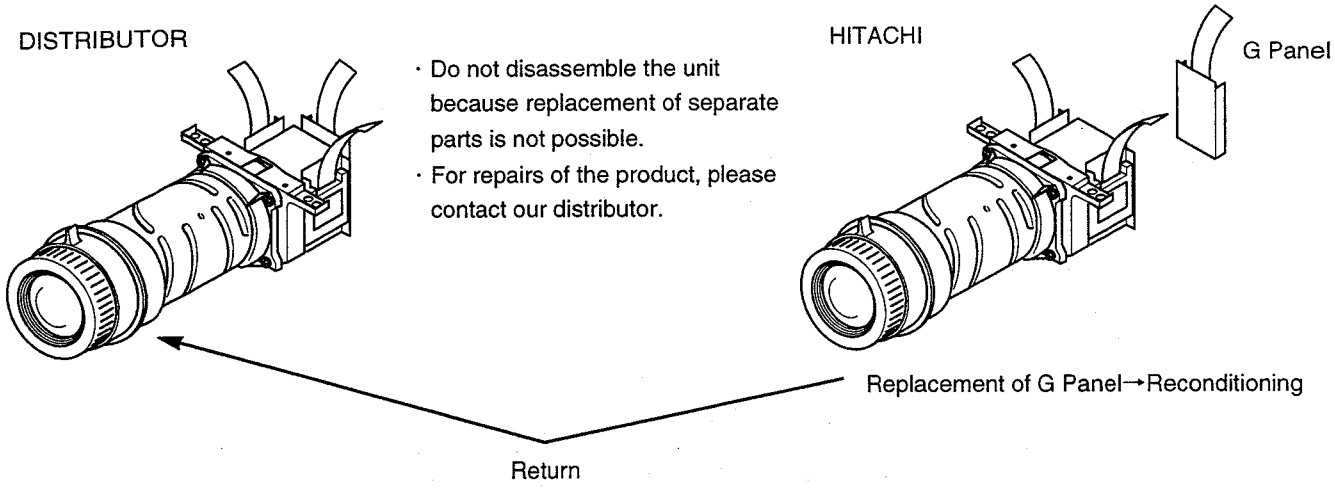
● When Upper case is removed

Upper case is lifted as the figure with pulling a handle.



● Before Replacing the LCD / Lens Prism

You should not replace separately the parts of the liquid crystal LCD / Lens Prism because it works properly only when used together. Therefore, regarding these parts, you can either replace part , LCD / Lens Prism Ass'y, or send the whole unit LCD / Lens Prism Ass'y back to Hitachi, where we will replace the malfunctioning part, recondition the device and send it back to you. In that case please contact our distributor.


DISTRIBUTOR
· Do not disassemble the unit because replacement of separate parts is not possible.
· For repairs of the product, please contact our distributor.
HITACHI
G Panel
Replacement of G Panel→Reconditioning
Return

6 - 2 Service point of principal parts

(1) Removing the UPPER CASE ASS'Y.
1. Remove 9 screws and remove the UPPER CASE ASS'Y.

(2) Removing the PWB ASS'Y DRIVE.
1. Remove the UPPER CASE ASS'Y.(Refer to item 6-2(1))
2. Release the lock of the connector housing and disconnect the FPC of the LCD module ass'y.
3. Remove 5 screws and disconnect 9 connectors and remove the PWB ASS'Y DRIVE.

(3) Removing the SPEAKER.
1. Remove 2 screws and disconnect a connector and remove the SPEAKER.

(4) Removing the POWER UNIT(BALLAST).
1. Remove 4 screws and disconnect lamp connector and remove the POWER UNIT(BALLAST).

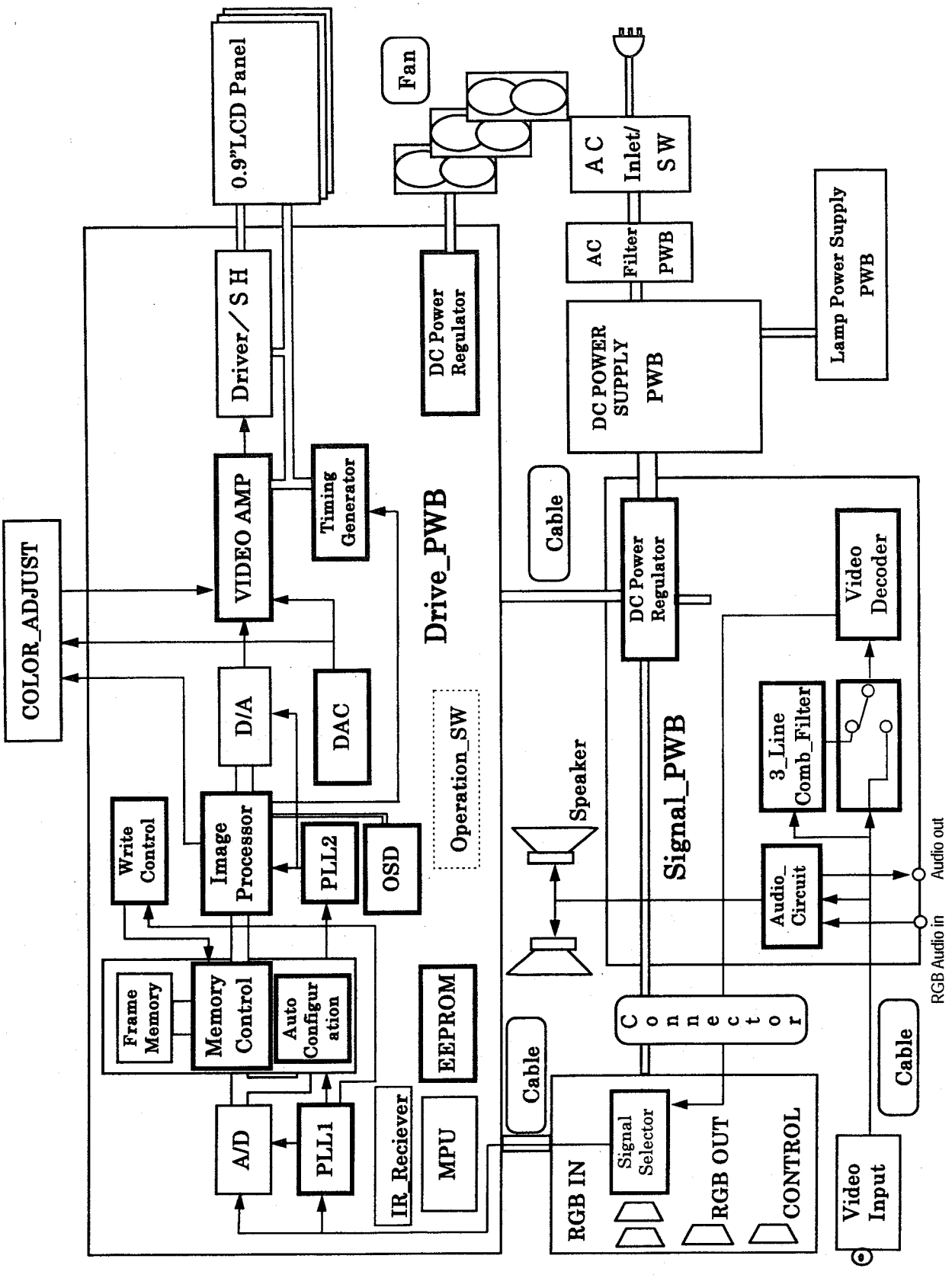
(5) Removing the LAMP COVER ASS'Y.
1. Remove the UPPER CASE ASS'Y.(Refer to item 6-2(1))
2. Remove the PWB ASS'Y DRIVE.(Refer to item 6-2(2))
3. Remove the SPEAKER.(Refer to item 6-2(3))
4. Remove the PWB ASS'Y POWER UNIT(BALLAST).(Refer to item 6-2(4))
5. Remove 3 screws and remove the LAMP COVER ASS'Y.

(6) Removing the DICHROIC OPTICS UNIT.
1. Remove the UPPER CASE ASS'Y.(Refer to item 6-2(1))
2. Remove the PWB ASS'Y DRIVE.(Refer to item 6-2(2))
3. Remove the SPEAKER.(Refer to item 6-2(3))
4. Remove the PWB ASS'Y POWER UNIT(BALLAST).(Refer to item 6-2(4))
5. Remove the LAMP COVER ASS'Y.(Refer to item 6-2(5))
6. Remove a screw and remove the PWB ASS'Y CORRECTION COLOR.
7. Remove a screw and remove the AC INLET.
8. Remove 3 screws and remove the DICHROIC OPTICS UNIT.

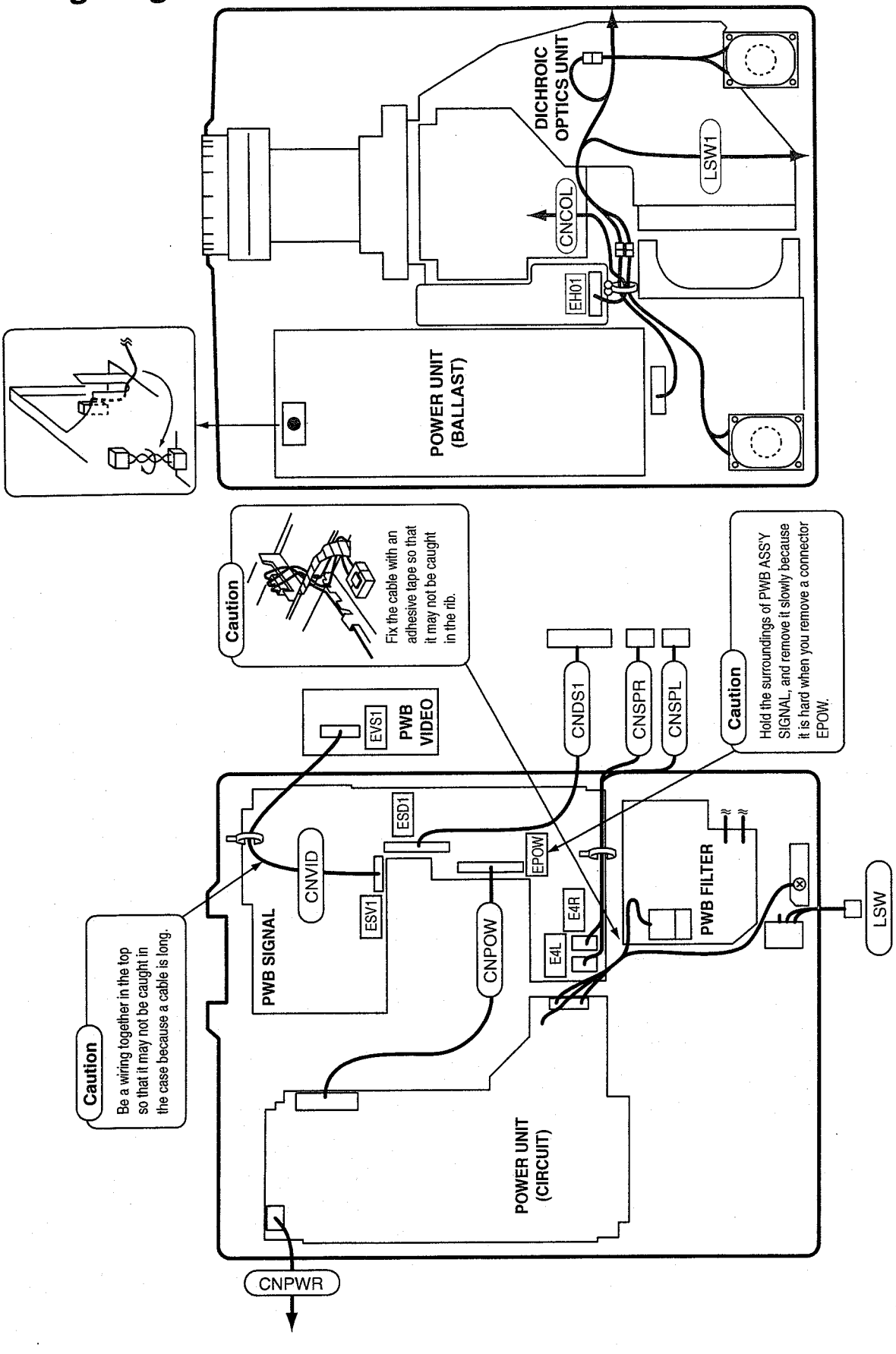
(7) Removing the PWB ASS'Y INPUT TERMINAL RGB and PWB ASS'Y INPUT TERMINAL VIDEO.
1. Remove the UPPER CASE ASS'Y.(Refer to item 6-2(1))
2. Remove the PWB ASS'Y DRIVE.(Refer to item 6-2(2))
3. Remove the SPEAKER.(Refer to item 6-2(3))
4. Remove the PWB ASS'Y POWER UNIT(BALLAST).(Refer to item 6-2(4))
5. Remove the LAMP COVER ASS'Y.(Refer to item 6-2(5))
6. Remove the DICHROIC OPTICS UNIT.(Refer to item 6-2(6))
7. Remove a screw and remove the PWB ASS'Y INPUT TERMINAL VIDEO.
8. Remove 3 screws and remove the PWB ASS'Y INPUT TERMINAL PANEL.
9. Remove 2 screws and remove the PWB ASS'Y INPUT TERMINAL RGB.

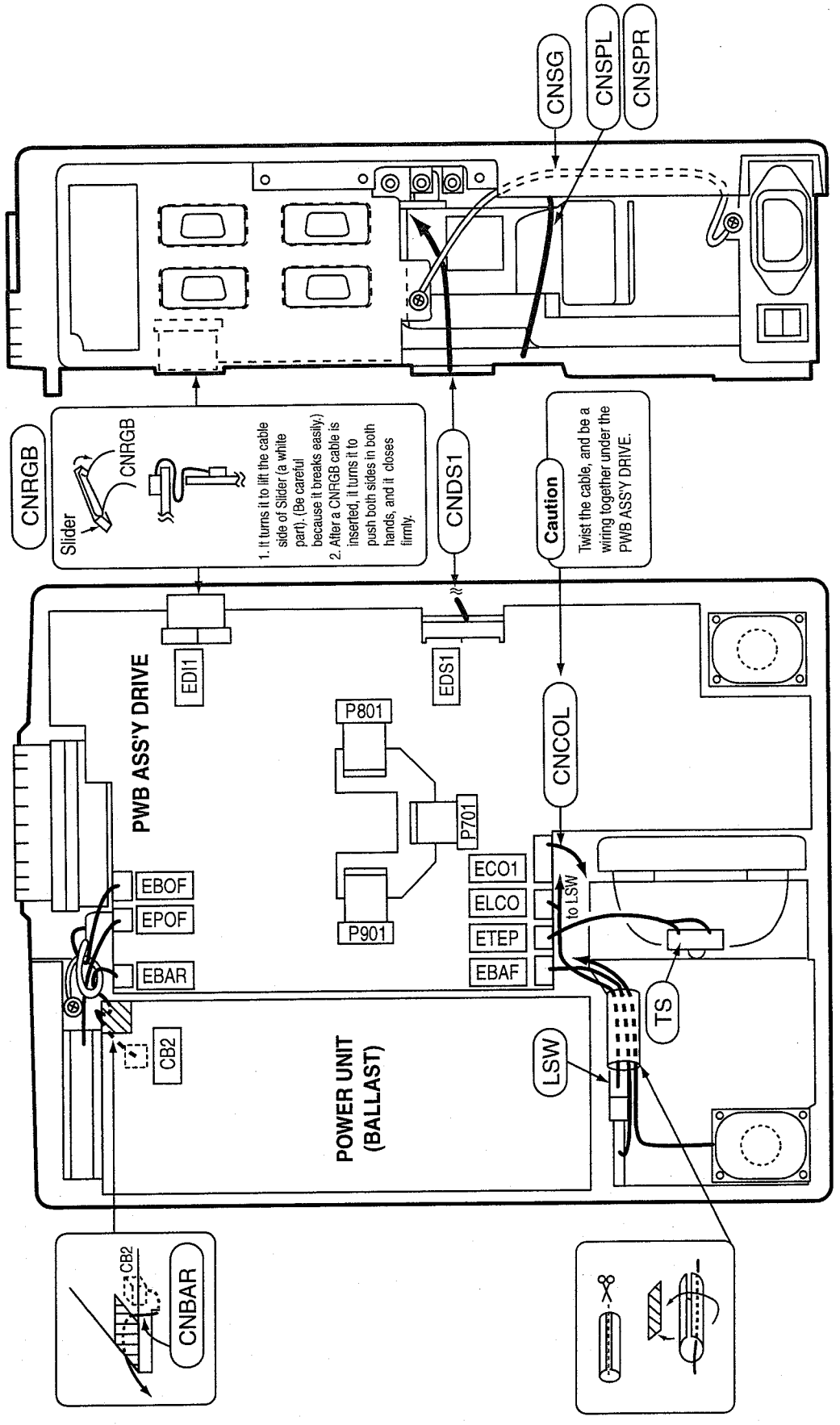
(8) Removing the DC FAN(POWER).
1. Remove the UPPER CASE ASS'Y.(Refer to item 6-2(1))
2. Remove the PWB ASS'Y DRIVE.(Refer to item 6-2(2))
3. Remove the SPEAKER.(Refer to item 6-2(3))
4. Remove the PWB ASS'Y POWER UNIT(BALLAST).(Refer to item 6-2(4))
5. Remove the LAMP COVER ASS'Y.(Refer to item 6-2(5))
6. Remove the DICHROIC OPTICS UNIT.(Refer to item 6-2(6))
7. Remove the PWB ASS'Y INPUT TERMINAL RGB and PWB ASS'Y INPUT TERMINAL VIDEO. (Refer to item 6-2(7))
8. Remove 3 screws and remove the DC FAN(POWER).

7. Block diagram

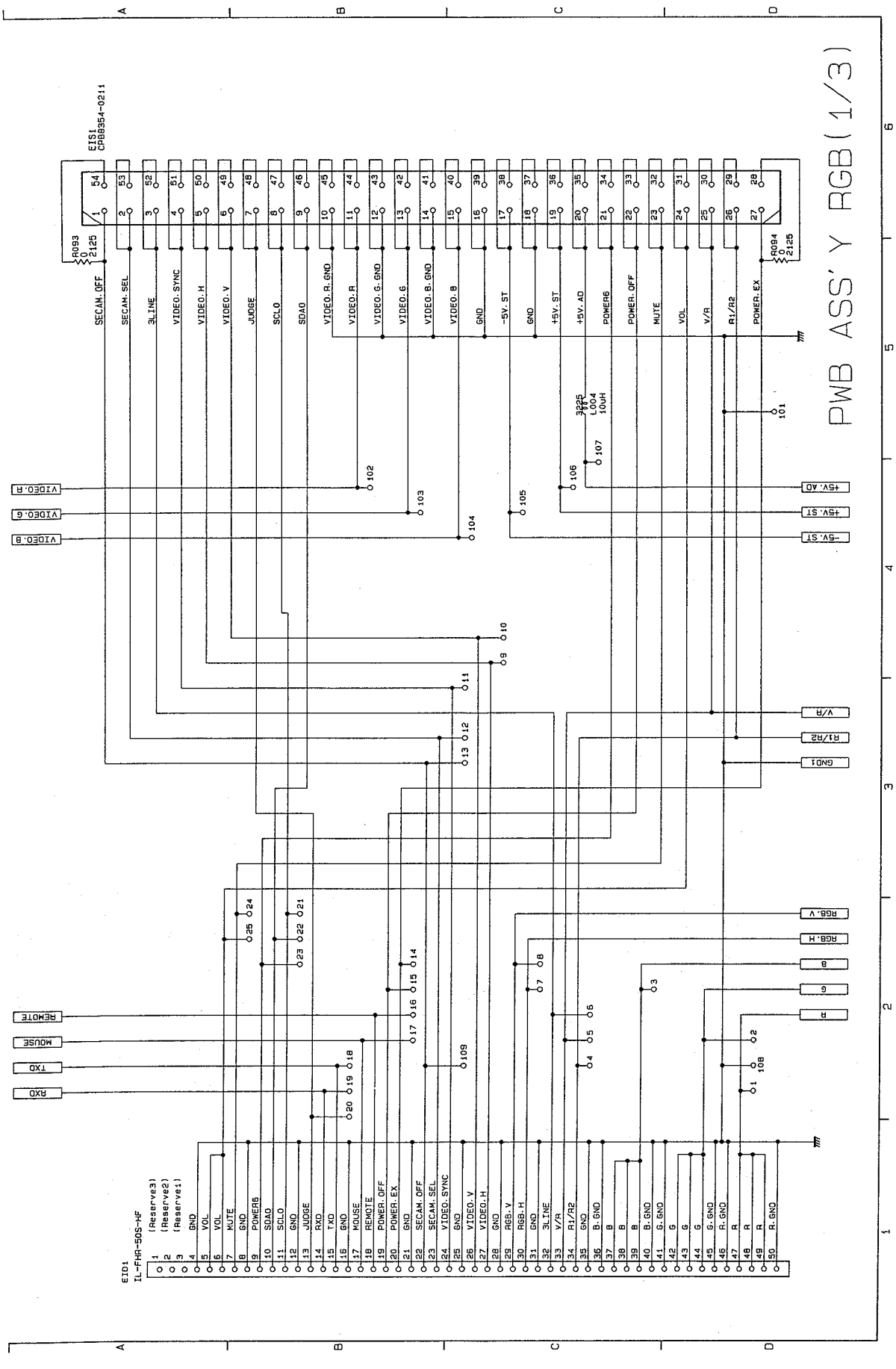


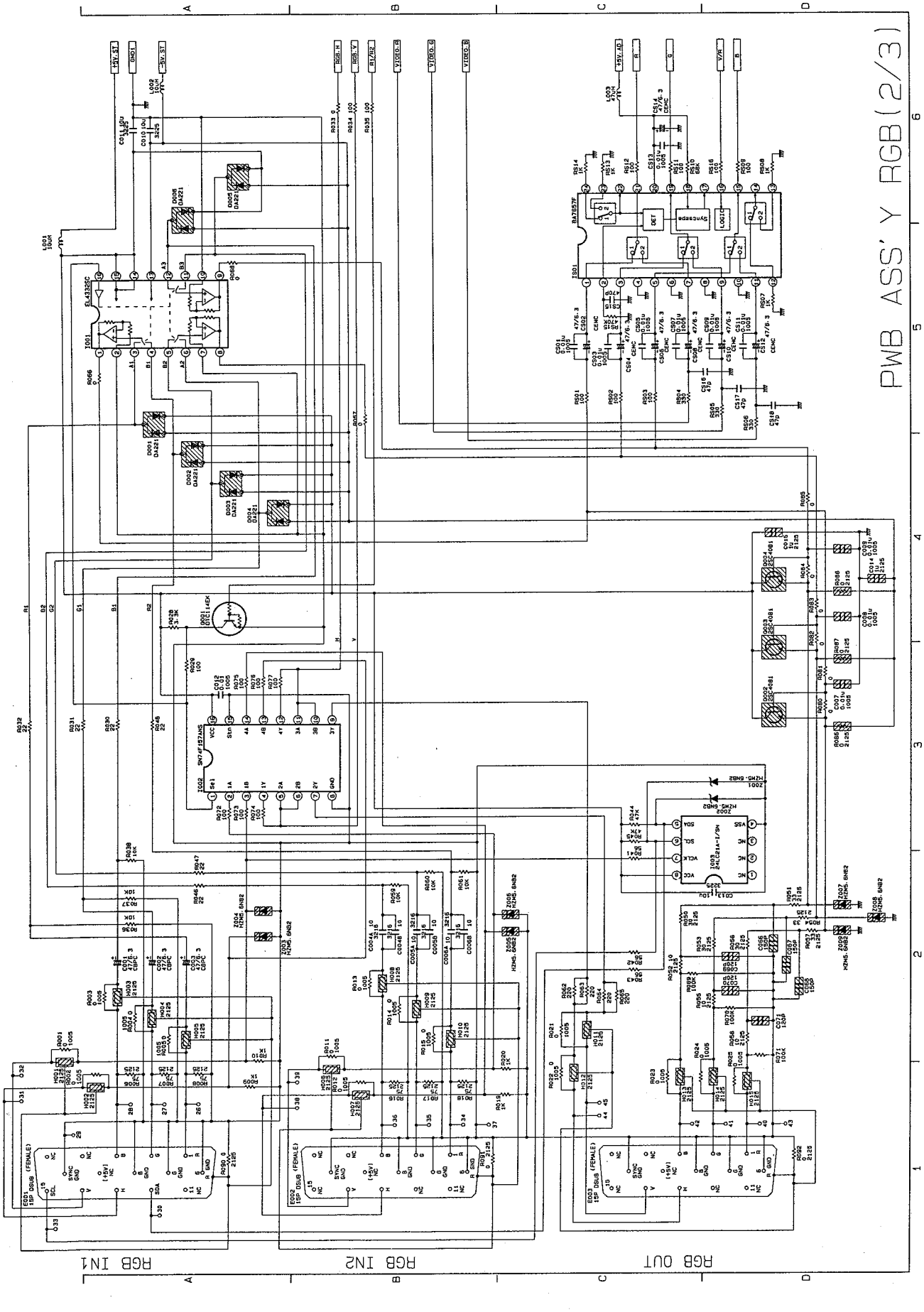
8. Wiring diagram

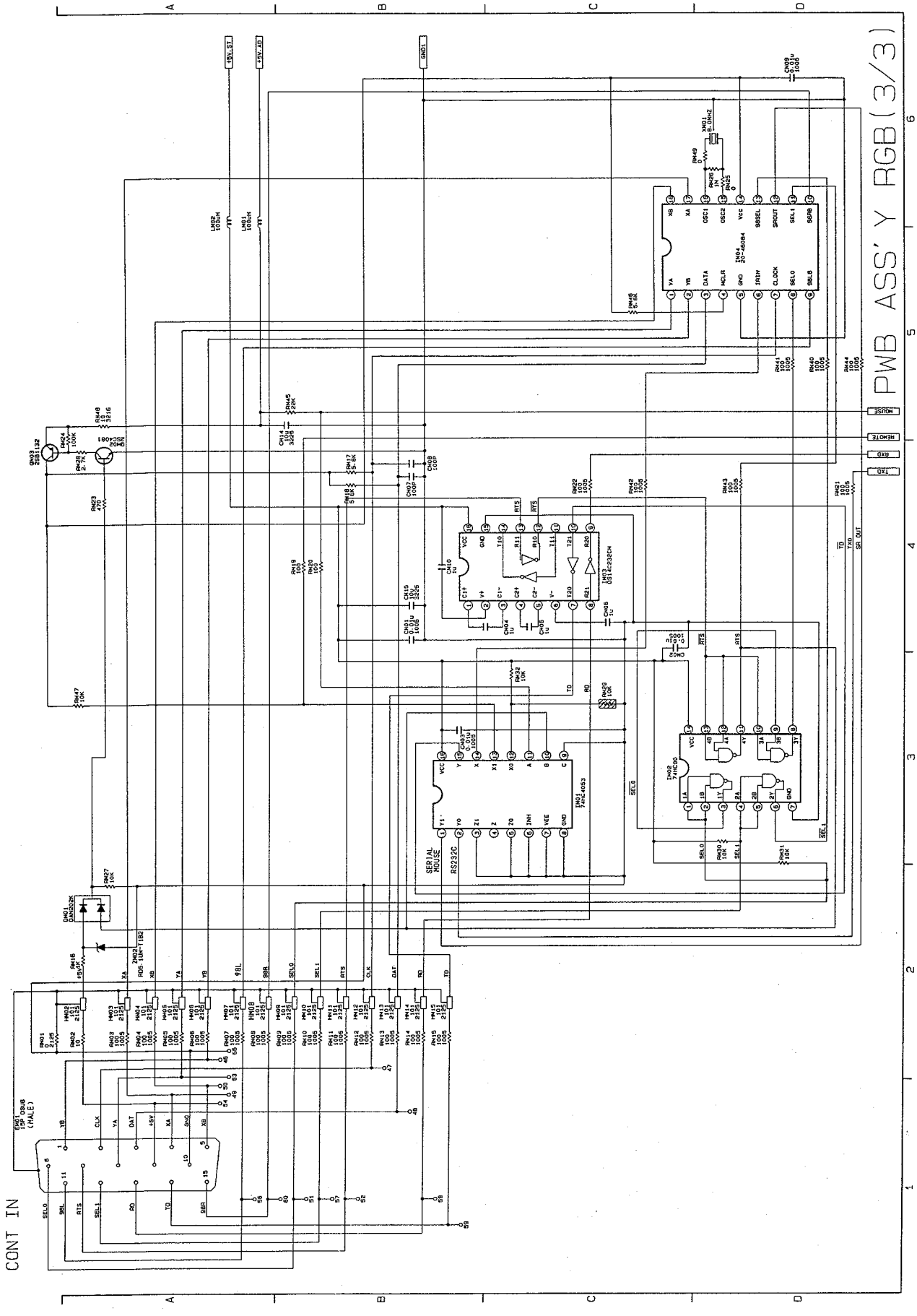


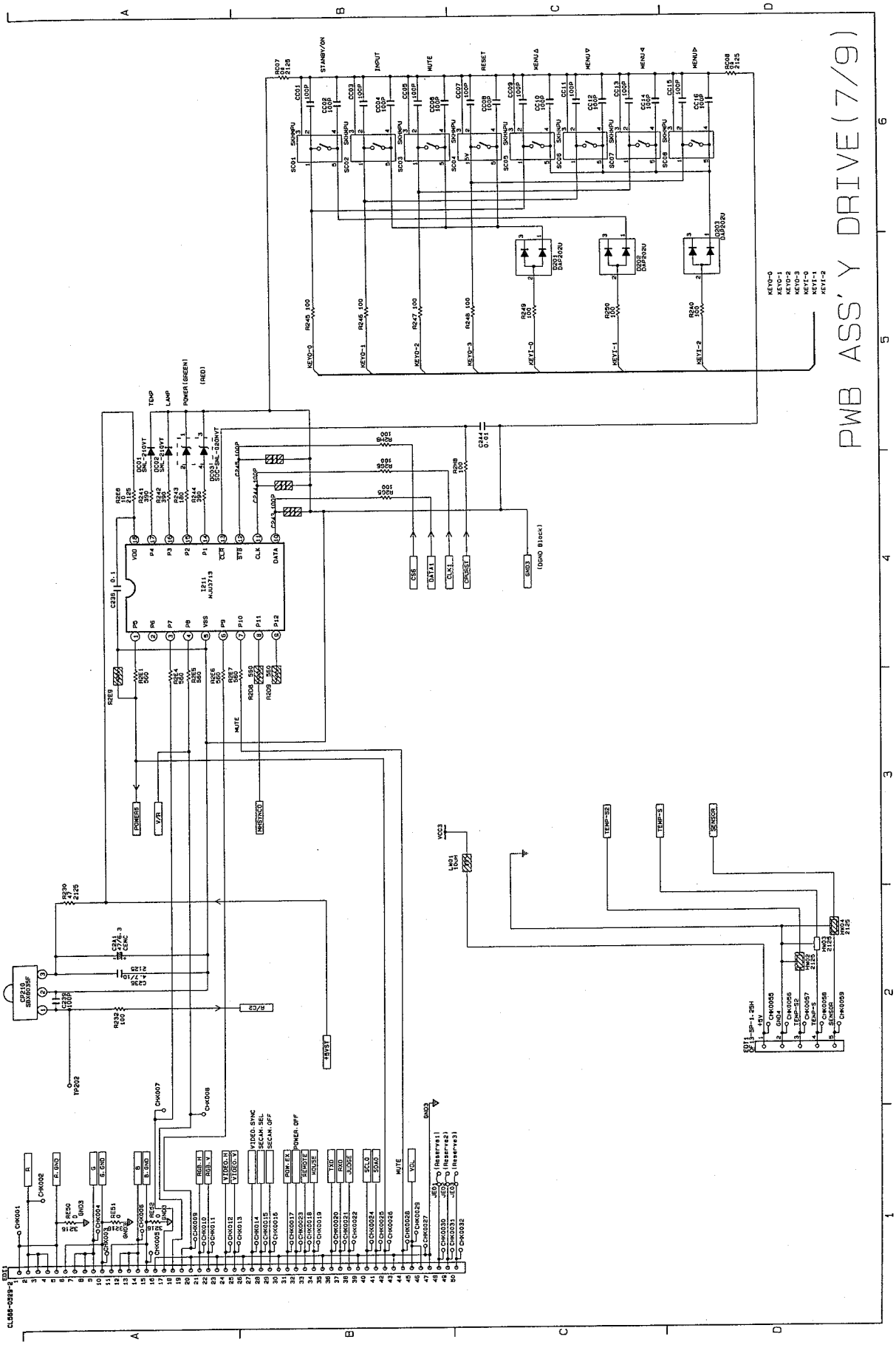

CNSG
CNSPL
CNSPR
CNRGB
Slider
CNRGB
1. It turns it to lift the cable side of Slider (a white part). (Be careful because it breaks easily.)
2. After a CNRGB cable is inserted, it turns it to push both sides in both hands, and it closes firmly.
CNDS1
Caution
Twist the cable, and be a wiring together under the PWB ASS'Y DRIVE.
PWB ASS'Y DRIVE
EDI1
EDS1
P801
P701
P901
CNCOL
ECO1
ELCO
ETEP
EBAF
to LSW
EBOF
EPOF
EBAR
CB2
POWER UNIT
(BALLAST)
LSW
TS
CB2
CNBAR

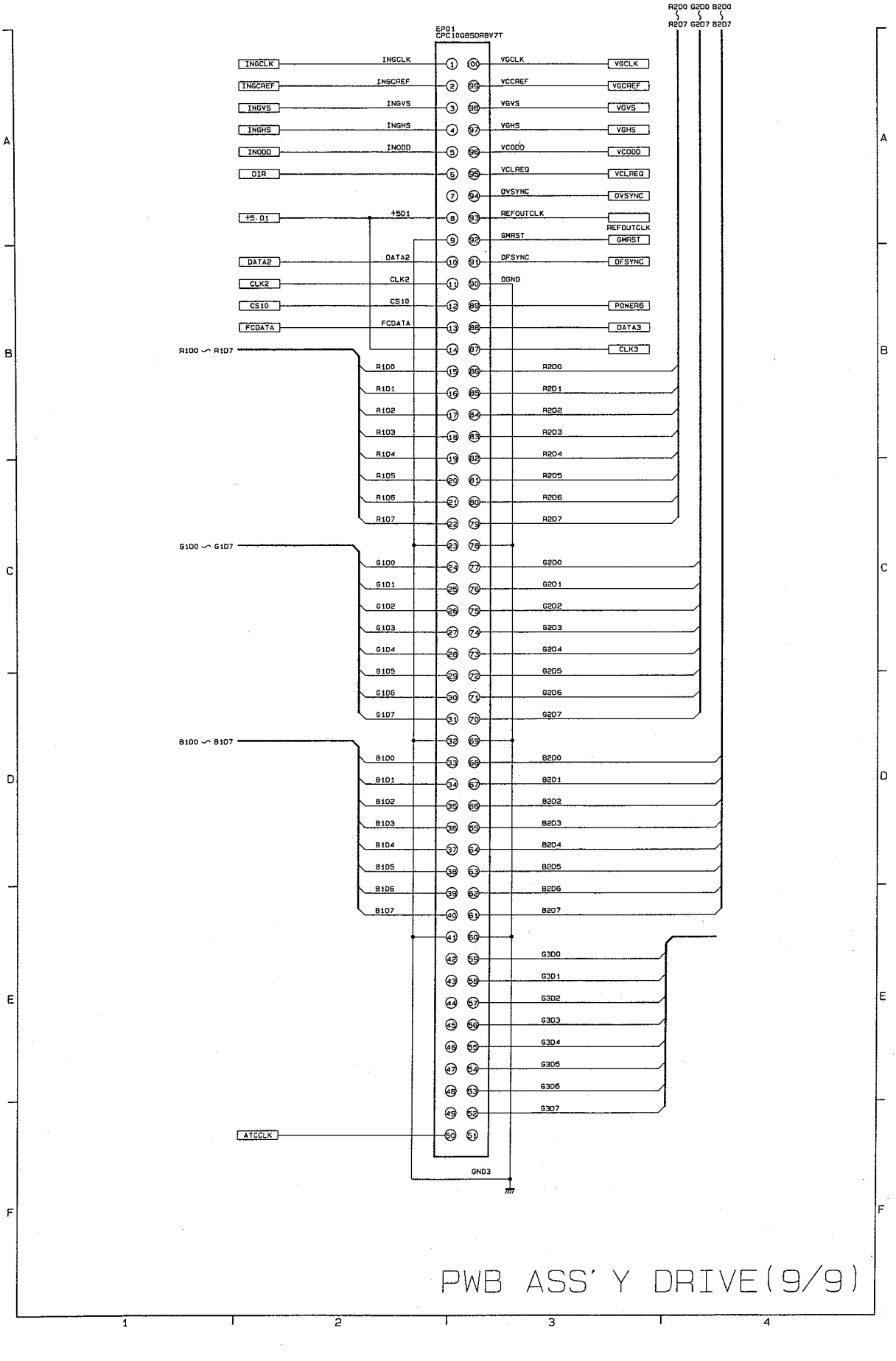
9. Basic circuit diagram

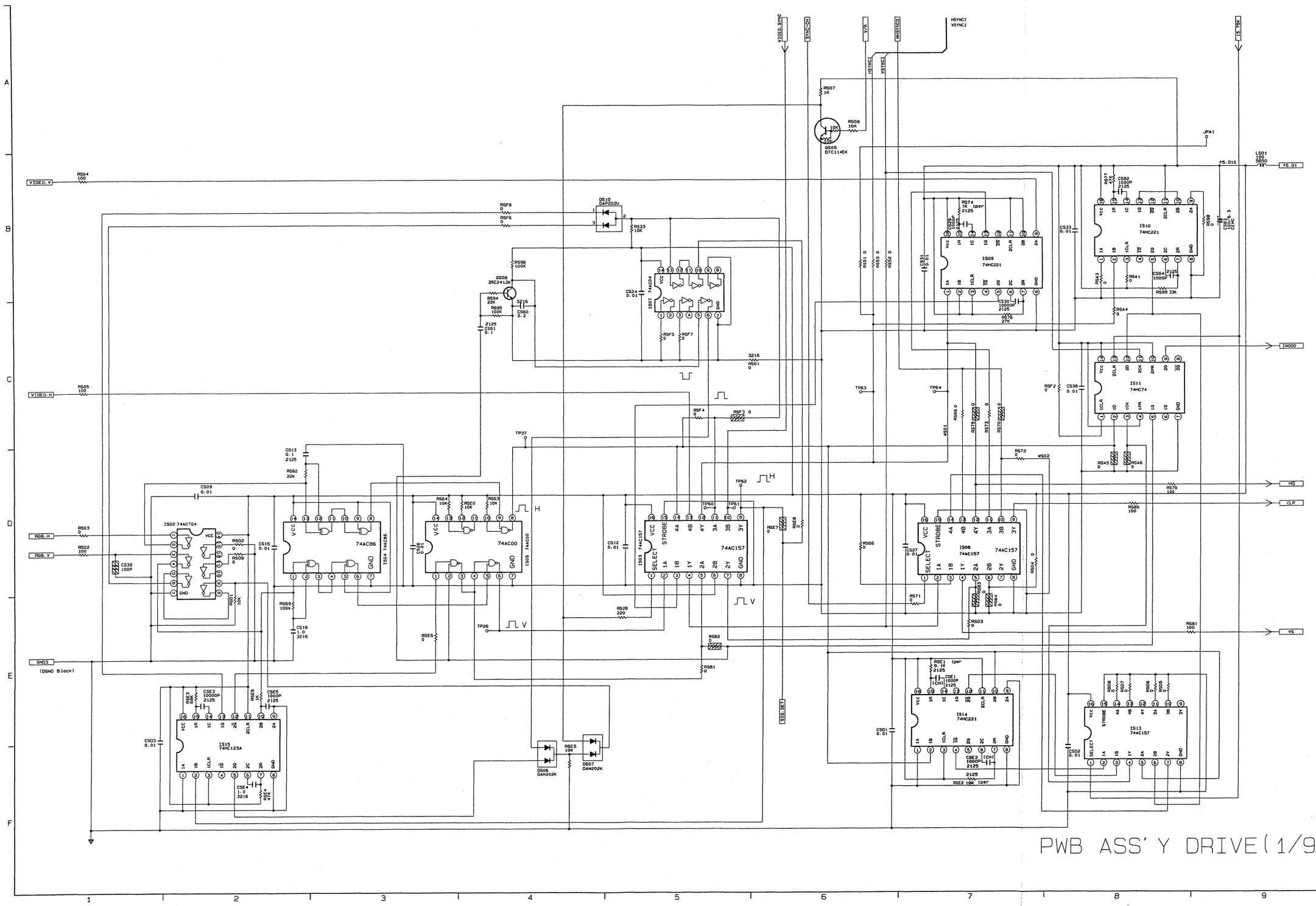


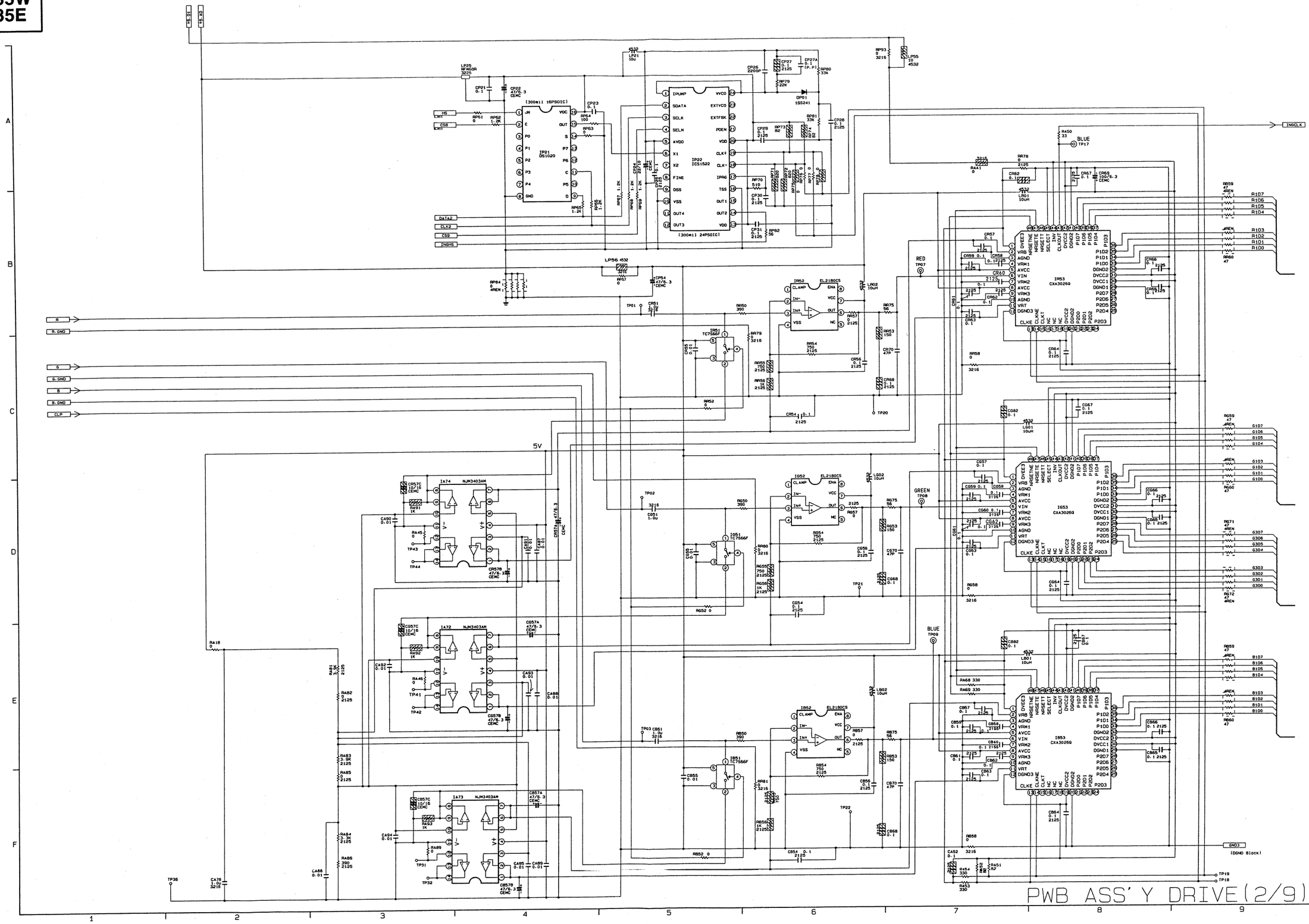

PWB ASS'Y RGB(2/3)
RGB IN1
RGB IN2
RGB OUT

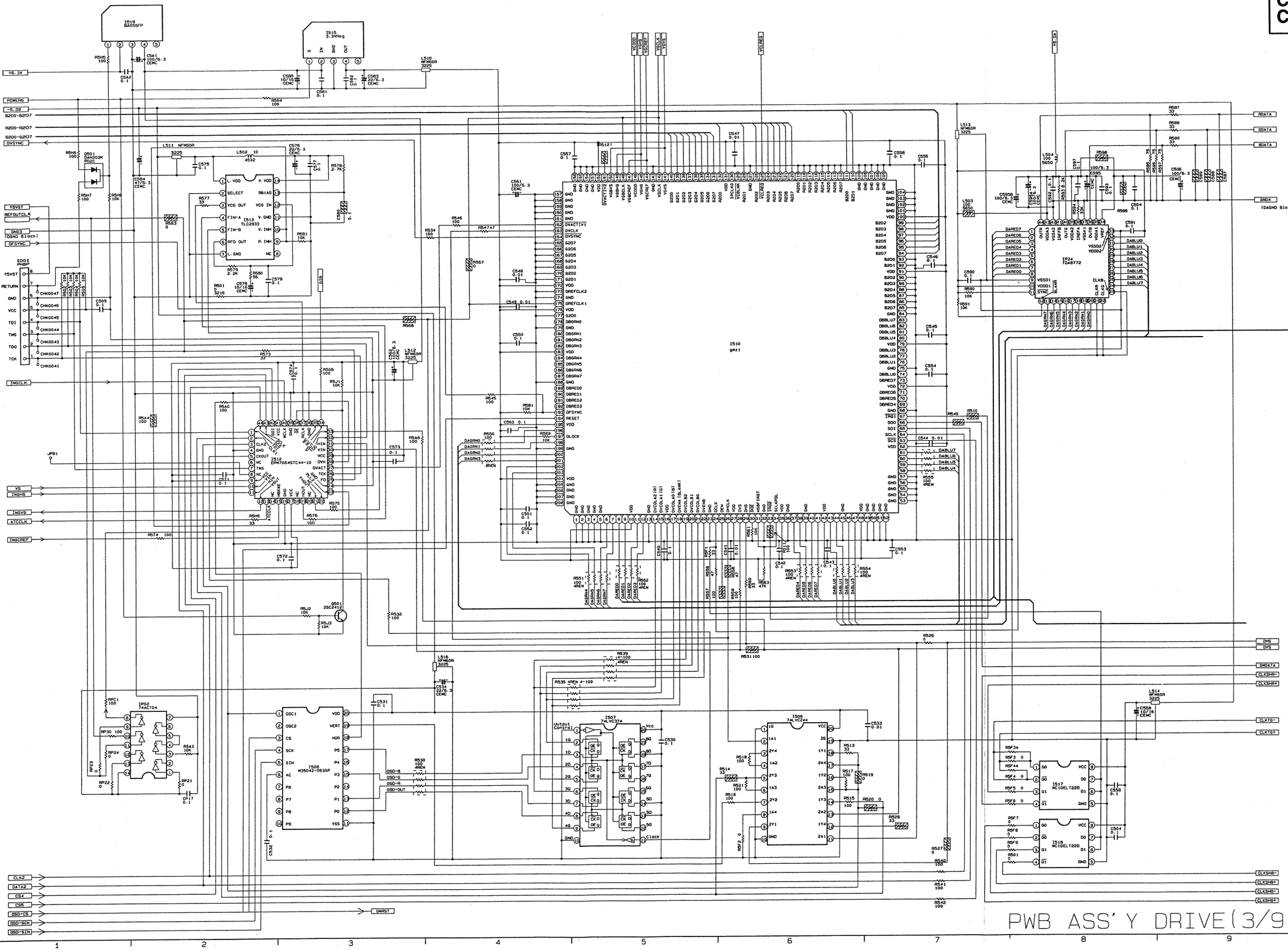

PWB ASS' Y RGB(3/3)
CONT IN
SERIAL MOUSE
RS232C
MOUSE
REMOTE
RXD
TXD
SR OUT


PWB ASS'Y DRIVE(7/9)
STANBY/ON
INPUT
MUTE
RESET
MENU△
MENU▽
MENU◁
MENU▷
KEY0-0
KEY0-1
KEY0-2
KEY0-3
KEY1-0
KEY1-1
KEY1-2
(DGND Block)
TEMP
LAMP
POWER(GREEN)
(RED)
CSB
DATA1
CLK1
CRESET
GND3
TEMP-SB
TEMP-S
SENSOR
VCC3
5V
GND4
TEMP-SB
TEMP-S
SENSOR
VIDEO SYNC
SECAM SEL
SECAM OFF
POW.DET
REMOTE
MOUSE
(Reserve1)
(Reserve2)
(Reserve3)
MUTE
VOL
RESET
POWERB
VSR
HDRSYNC
TP202

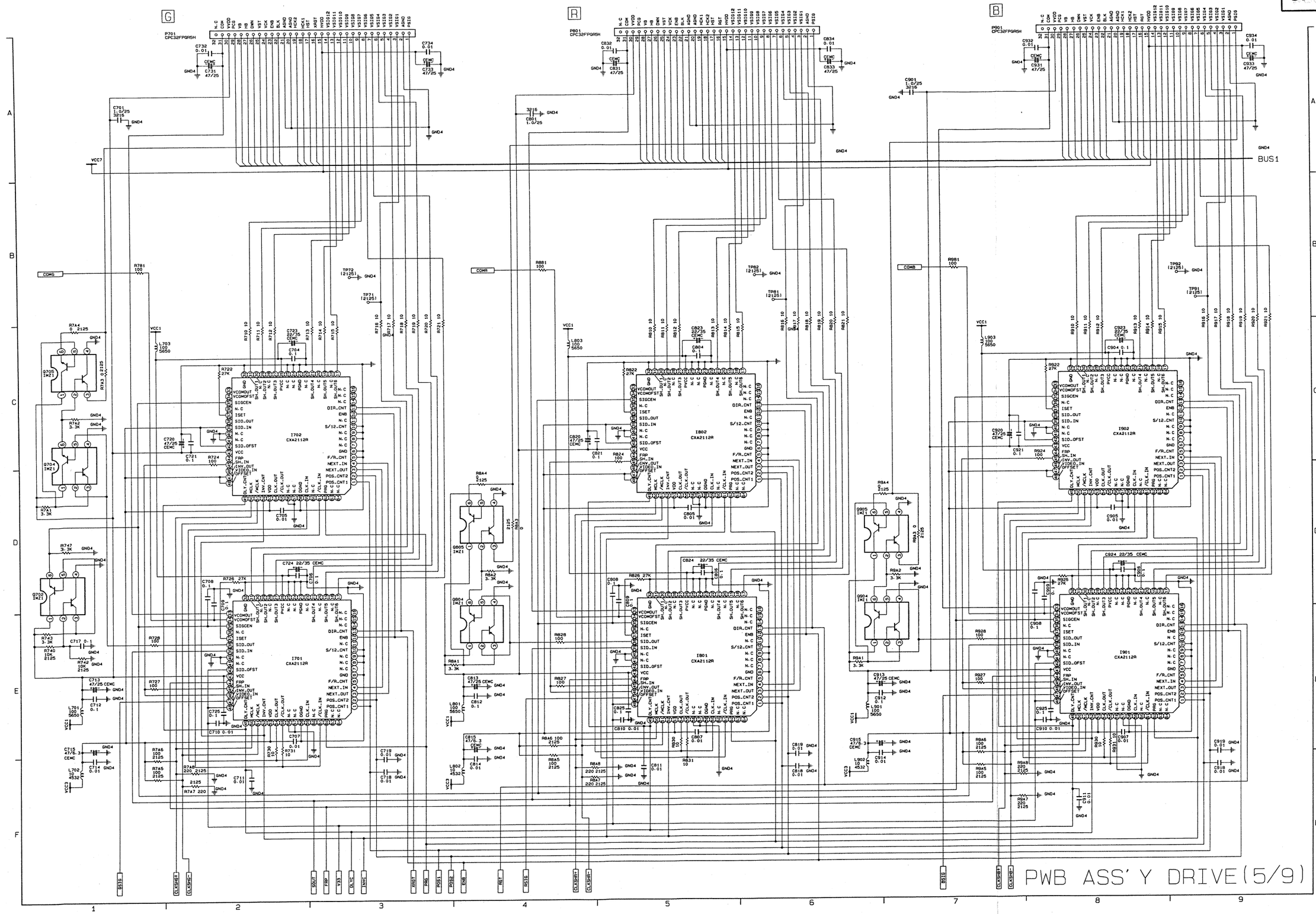

R2D0 G2D0 B2D0
R2D7 G2D7 B2D7
EP01
CPC100BSORBV7T
INGCLK
INGCREF
INGVS
INGHS
INODD
OIR
+5.01
DATA2
CLK2
CS10
FCDATA
R1D0 ~ R1D7
G1D0 ~ G1D7
B1D0 ~ B1D7
ATCCLK
VGCLK
VGCREF
VGVS
VGHS
VCODD
VCLREQ
OVSYNC
REFOUTCLK
GMRST
DFSYNC
DGND
POWER6
DATA3
CLK3
G3D0
G3D1
G3D2
G3D3
G3D4
G3D5
G3D6
G3D7
GND3
PWB ASS' Y DRIVE(9/9)

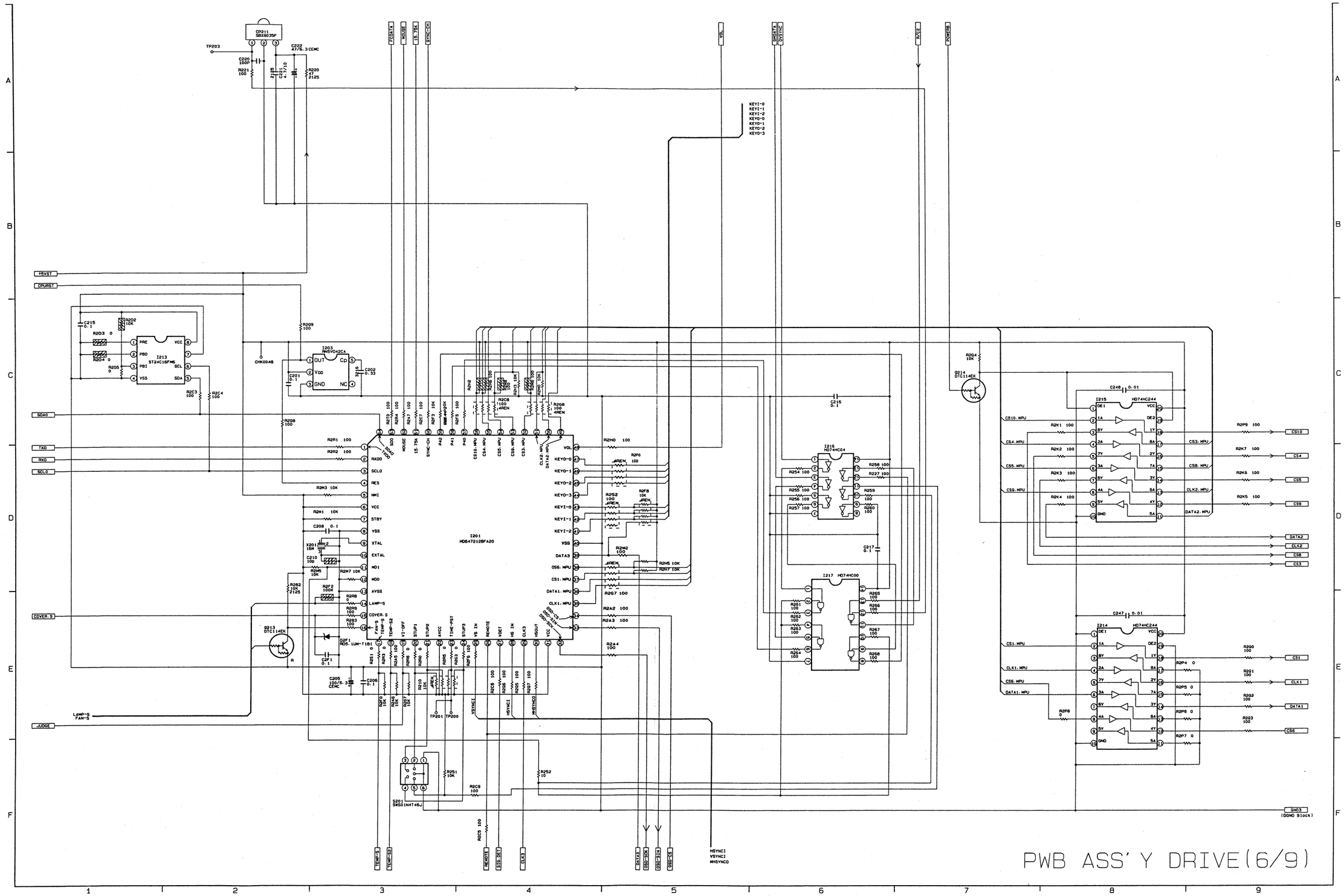

VIDEO.SYNC
SYNC-CH
V/H
HSYNCO
HSYNCI
VSYNCI
HSYNCI
VSYNCI
15.75K
VIDEO.V
VIDEO.H
RS04 100
RS05 100
RS07 1K
RS08 10K
QS09 DTC114EK
JPA1
+5.D1S
LS01 100 5650
+5.D1
INODD
HS
CLP
VS
RS78 100
RS80 100
RS81 100
RS79 100
IS10 74HC221
IS09 74HC221
IS11 74HC74
IS08 74AC157
IS14 74HC221
IS13 74AC157
IS15 74HC123A
IS07 74AC04
IS02 74ACT04
IS04 74AC86
IS05 74AC00
IS03 74AC157
RS74 1K 1per
RS76 27K
RS99 33K
RS72
RS71
RS66
RS26 220
RS62 22K
RS59 100K
RS03
RS02 100
RS01 10K
RS96 100K
RS94 22K
RS95 100K
QS08 2SC2412K
QS10 DAP202U
RS33 10K
RS64 10K
RS60 10K
RS63 10K
RSE0 10K
RSE7
RSE8
RSE6
RSB2
RSB1
RSE1 9.1K 1per
RSE2 18K 1per
RSE5 10K
QS06 DAN202K
QS07 DAN202K
RSA1
RSA4
RSA5
RSA6
RS98
RS97
RS84
RS85
RS04
RS03
RS51
RS53
RS52
RS69
RS75
RS73
RS70
RSF2
RSF3
RSF4
RSF5
RSF7
RS01
RSF8
RSF6
RSE9
RSE3
RSE4 47K
RSD1
RSD2
RSD3
RSD4
RSB3
RSB4
RSB5
RSB6
RSB7
RSB8
CS13 0.1 2125
CS09 0.01
CS15 0.01
CS16 1.0 3216
CS39 100P
CS24 0.01
CS60 2.2
CS61 0.1
CS31 0.01
CS33 0.01
CS36 0.01
CS38 0.01
CS37 0.01
CS12 0.01
CSD1 0.01
CSD2 0.01
CSD3 0.01
CSE4 1.0 3216
CSE3 10000P 2125
CSE6 1000P 2125
CSE1 1000P (CH) 2125
CSE2 1000P (CH) 2125
CS82 1000P 2125
CS83 1000P 2125
CS84 1000P 2125
CS30 10000P 2125
CS87 0.3 CERAMIC
TP63
TP64
TP37
TP62
TP60
TP61
TP26
H
V
GND3
(GND Block)
STB.DET
PWB ASS'Y DRIVE(1/9)

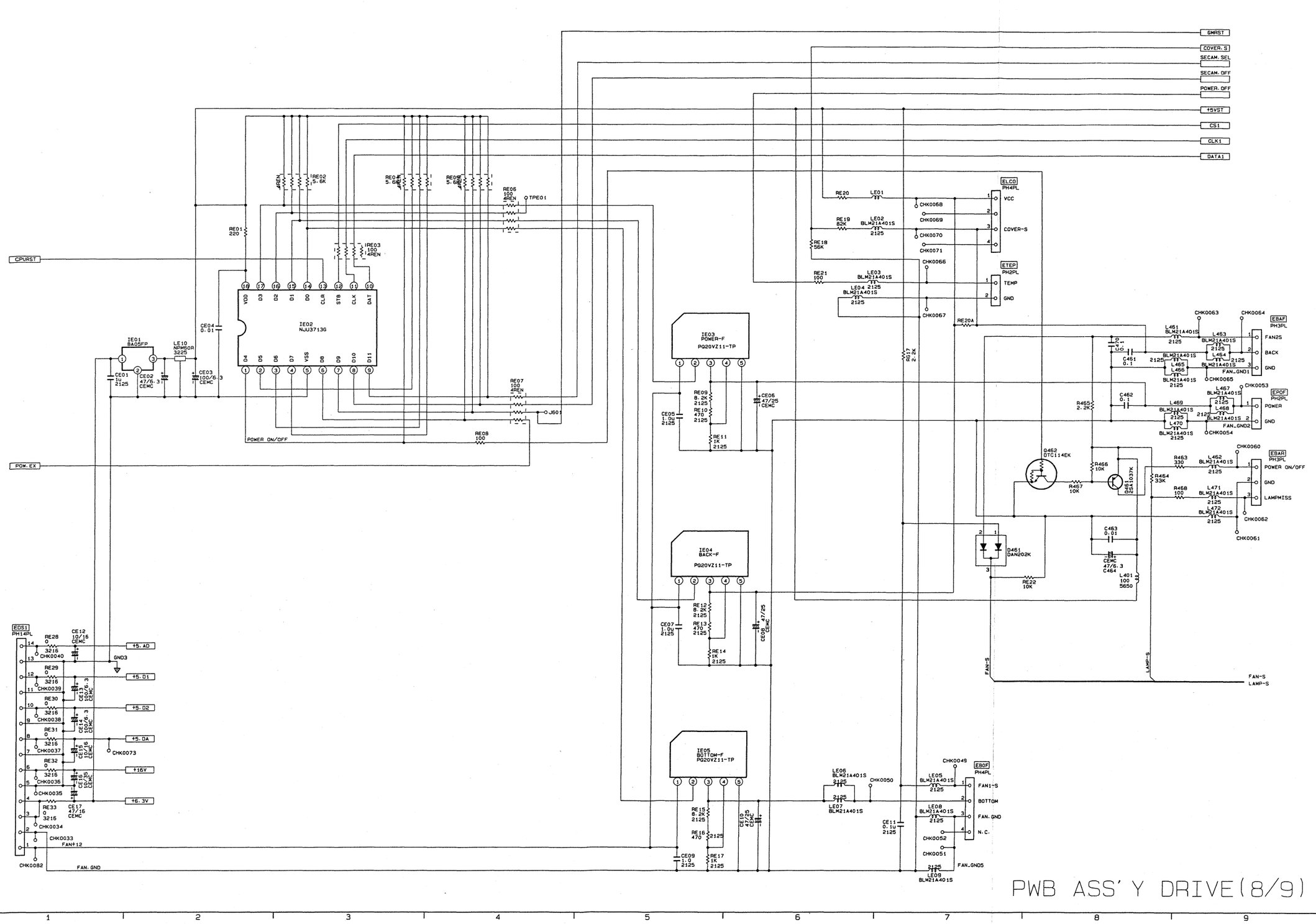

PWB ASS'Y DRIVE(2/9)
+5.0D
+5.0D
IP21 DS1020
IP22 ICS1522
DATA2
CLK2
CS9
INGHS
HS
CSB
INGCLK
R
R.GND
G
G.GND
B
B.GND
CLP
5V
RED
GREEN
BLUE
IA74 NJM3403AM
IA72 NJM3403AM
IA73 NJM3403AM
IR51 TC7S66F
IR52 EL2180CS
IR53 CXA3026Q
GND3
(DGND Block)
TP36
TP19
TP18


PWB ASS'Y DRIVE(3/9)
+6.3V
+5.0V
POWERS
-5.0V
B200-B207
R200-R207
G200-G207
DVSYNC
45VST
REFOUTCLK
GND3 (DGND Block)
DFSYNC
EDO1 PHBP
INGCLK
VS
INGHS
INGVS
ATCCLK
INSCREF
JPB1
IS19 BA05SFP
IS15 3.3VReg
IS13 TLC2933
IS12 EPM7064STC44-10
IS08 M35042-063SP
IS07 74LVC374
IS06 74LVC244
IP02 74ACT04
IP24 7DA8772
IS17 MC10EL T22D
IS18 MC10EL T22D
IS10 gm21
RDATA
GDATA
BDATA
GND4 (DAGND Block)
DHS
DVS
SWDATA
CLKSHB-
CLKSHB+
CLKTG-
CLKTG+
CLK2
DATA2
CS4
CS5
OSD-CS
OSD-SCK
OSD-SIN
DWRST

PWB ASS'Y DRIVE(4/9)

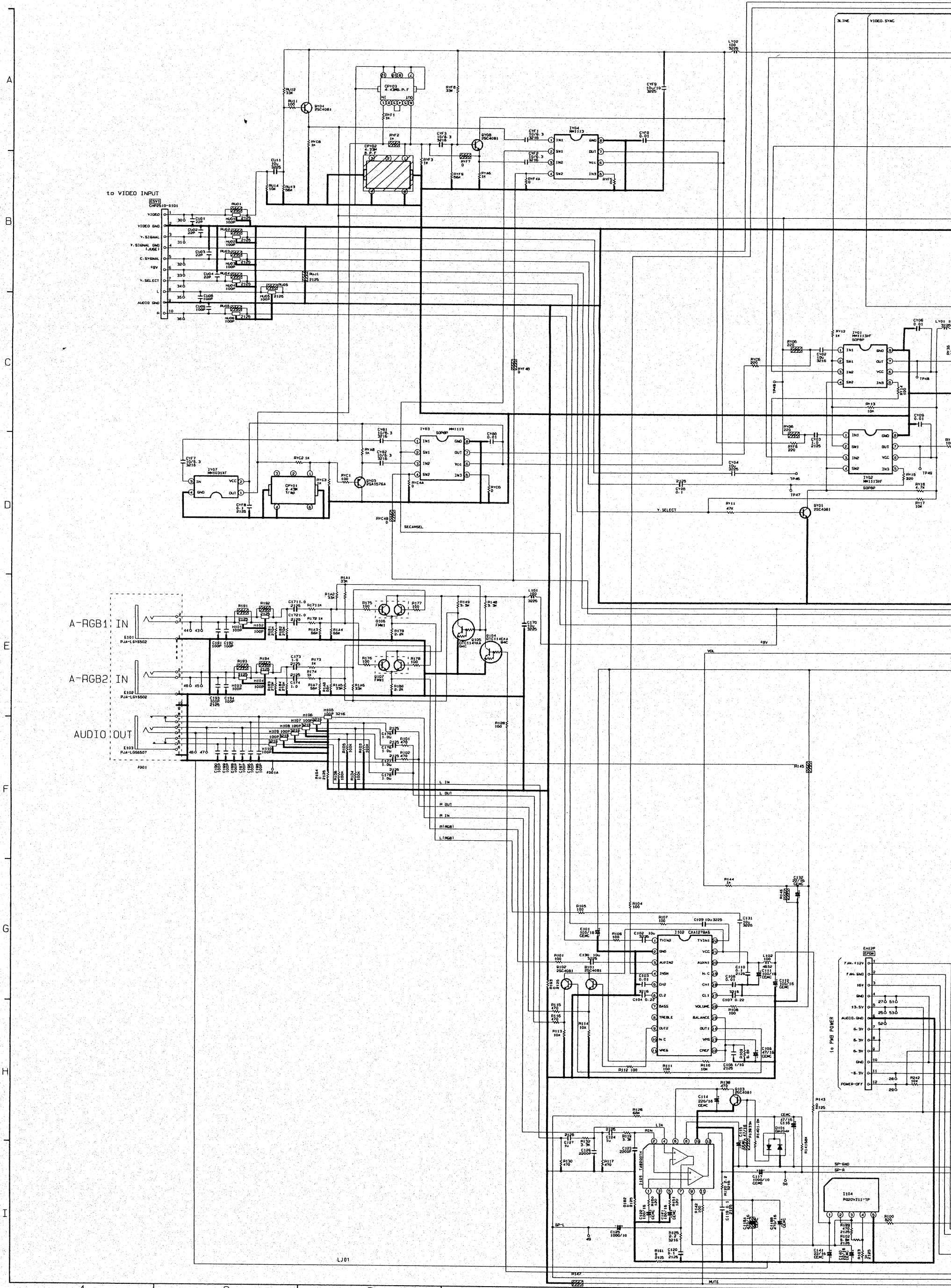

G
R
B
P701 CPC32FPGR5H
R801 CPC32FPGR5H
P901 CPC32FPGR5H
BUS1
VCC7
GND4
COMG
COMR
COMB
I702 CXA2112R
I802 CXA2112R
I902 CXA2112R
I701 CXA2112R
I801 CXA2112R
I901 CXA2112R
Q705 IM21
Q704 IM21
Q703 IM21
Q805 IM21
Q804 IM21
Q905 IM21
Q904 IM21
PWB ASS'Y DRIVE(5/9)

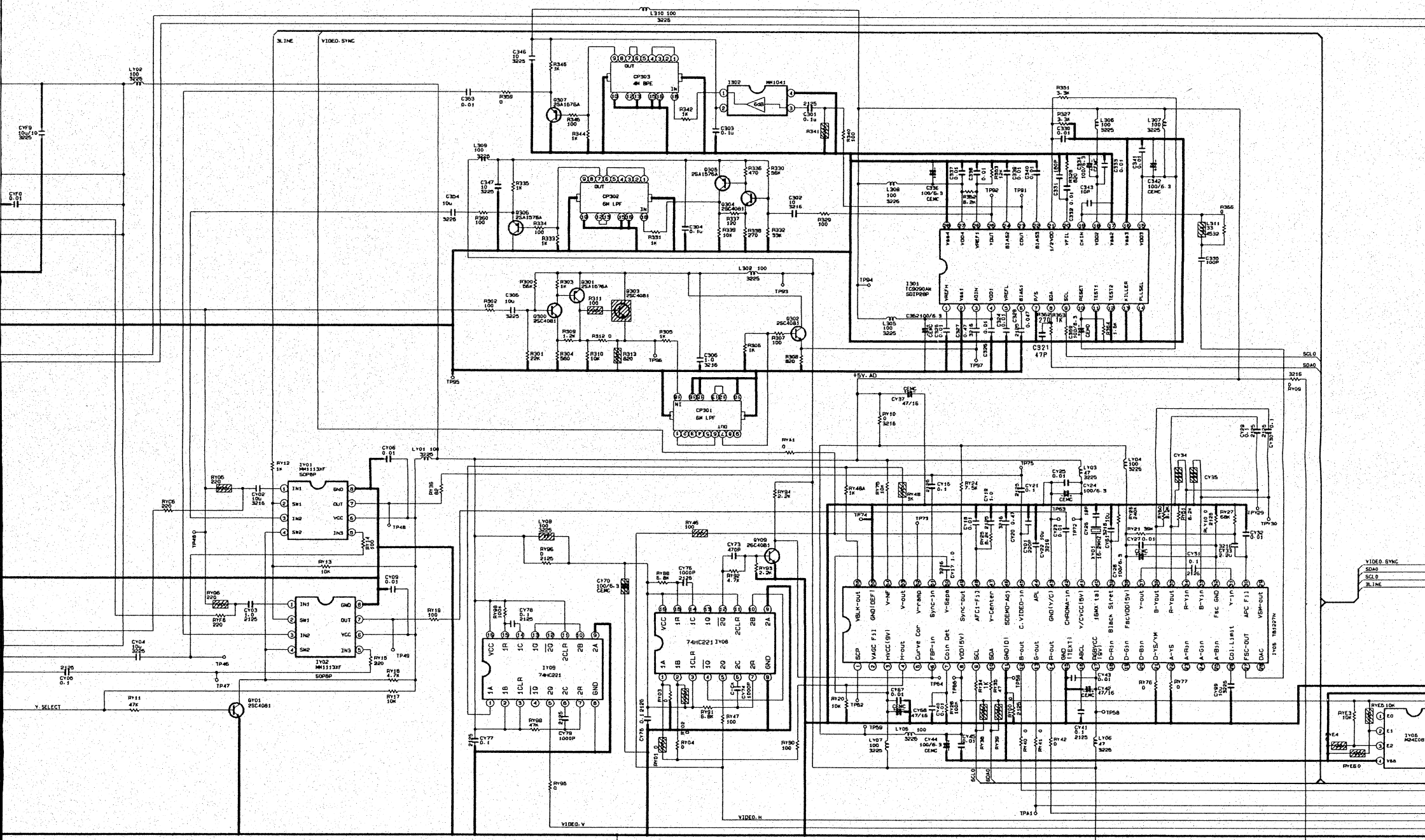

PWB ASS'Y DRIVE(6/9)
I201 MD6472128FA20
I213 ST24C16FM6
I203 RN5VD42CA
I215 HD74HC244
I216 HD74HC04
I217 HD74HC00
I214 HD74HC244
Q213 DTC114EK
Q214 DTC114EK
D251 RD5.1UM-T1B1
S201 SWS01N4T46J
TP203
TP201
TP200
CHK004B
KEY1-0
KEY1-1
KEY1-2
KEY0-0
KEY0-1
KEY0-2
KEY0-3
4RVST
CPURST
SDA0
TXD
RXD
SCL0
COVER.S
LAMP-S
FAN-S
JUDGE
TEMP-S
TEMP-S2
REMOTE
S10-DET
CLK3
DATA3
DSG-SCK
DSG-SIN
DSG-CS
MSYNC1
VSYNC1
MHSYNC0
GND3
(DGND Block)
CS10.MPU
CS4.MPU
CS5.MPU
CS9.MPU
CS3.MPU
CS8.MPU
CLK2.MPU
DATA2.MPU
CS1.MPU
CLK1.MPU
CS6.MPU
DATA1.MPU
CS10
CS4
CS5
CS9
CS3
CS8
CLK2
DATA2
CS1
CLK1
DATA1
CS6



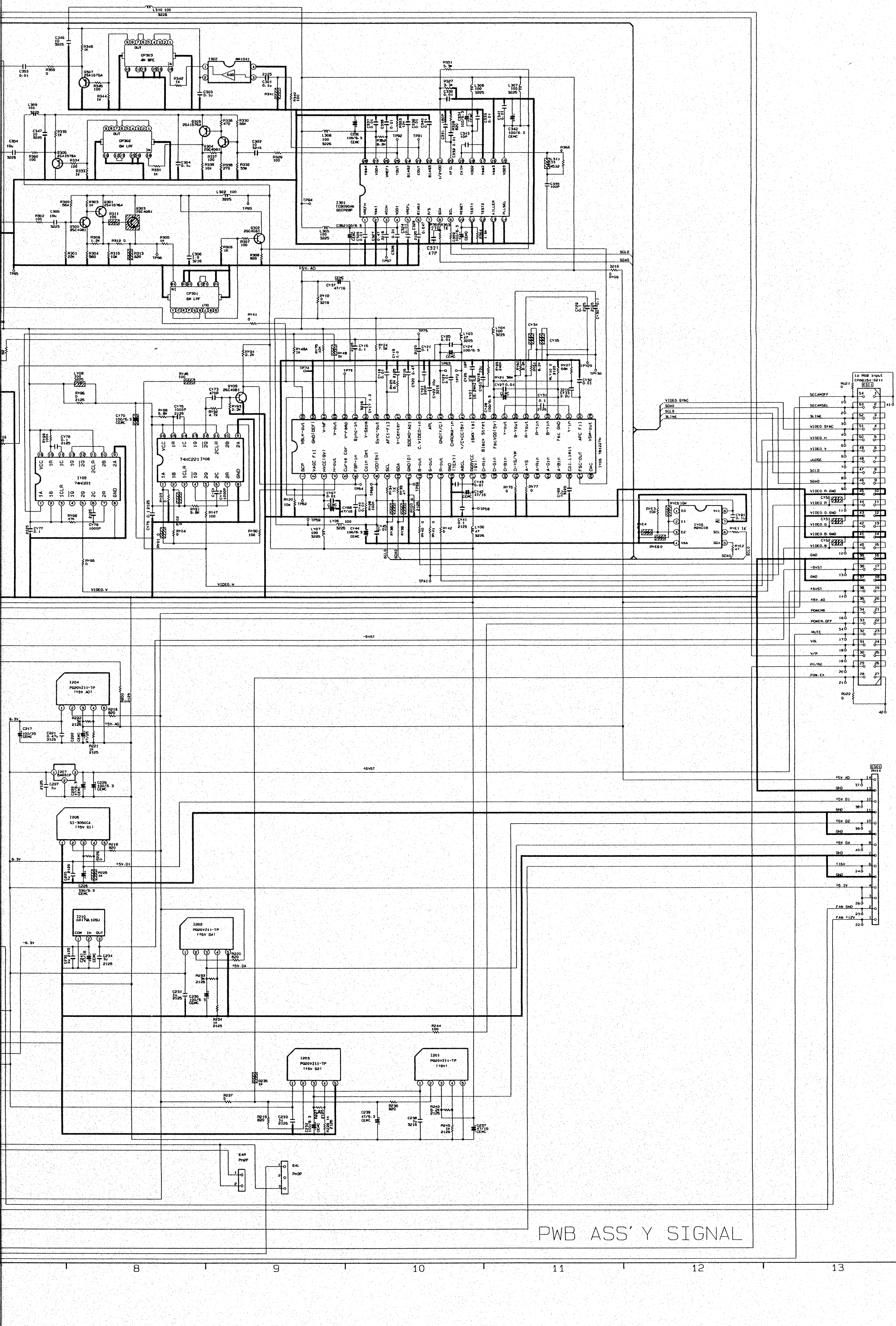
PWB ASS'Y DRIVE(8/9)

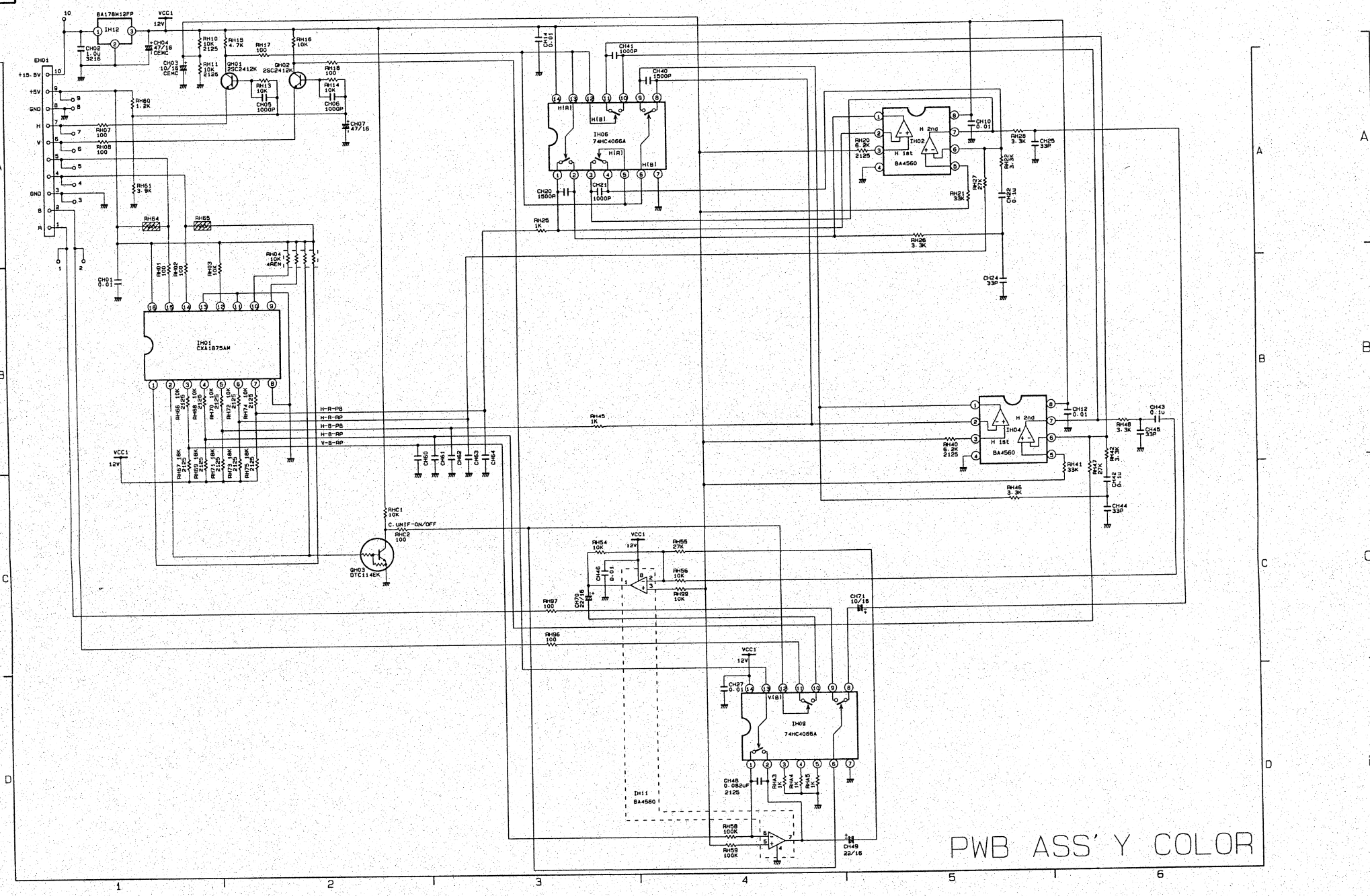
PWB ASS'Y DIGITAL


to VIDEO INPUT
A-RGB1 IN
A-RGB2 IN
AUDIO OUT
3LINE
VIDEO SYNC
Y SELECT
SECAMSEL
VOL
MUTE
L IN
L OUT
R OUT
R IN
R(RGB)
L(RGB)
SP-GND
SP-R
SP-L
+9V
to PWB POWER
LJ01

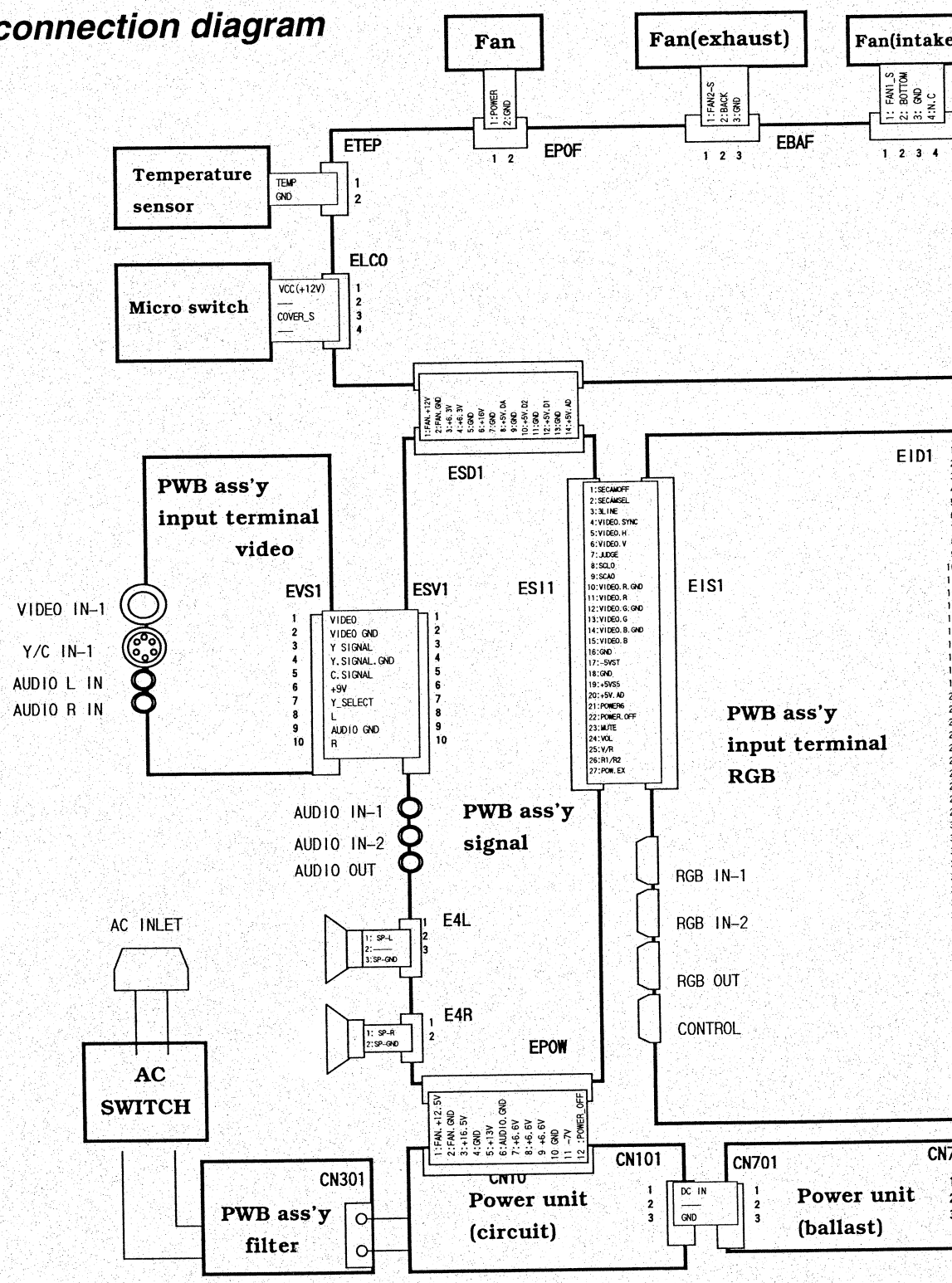


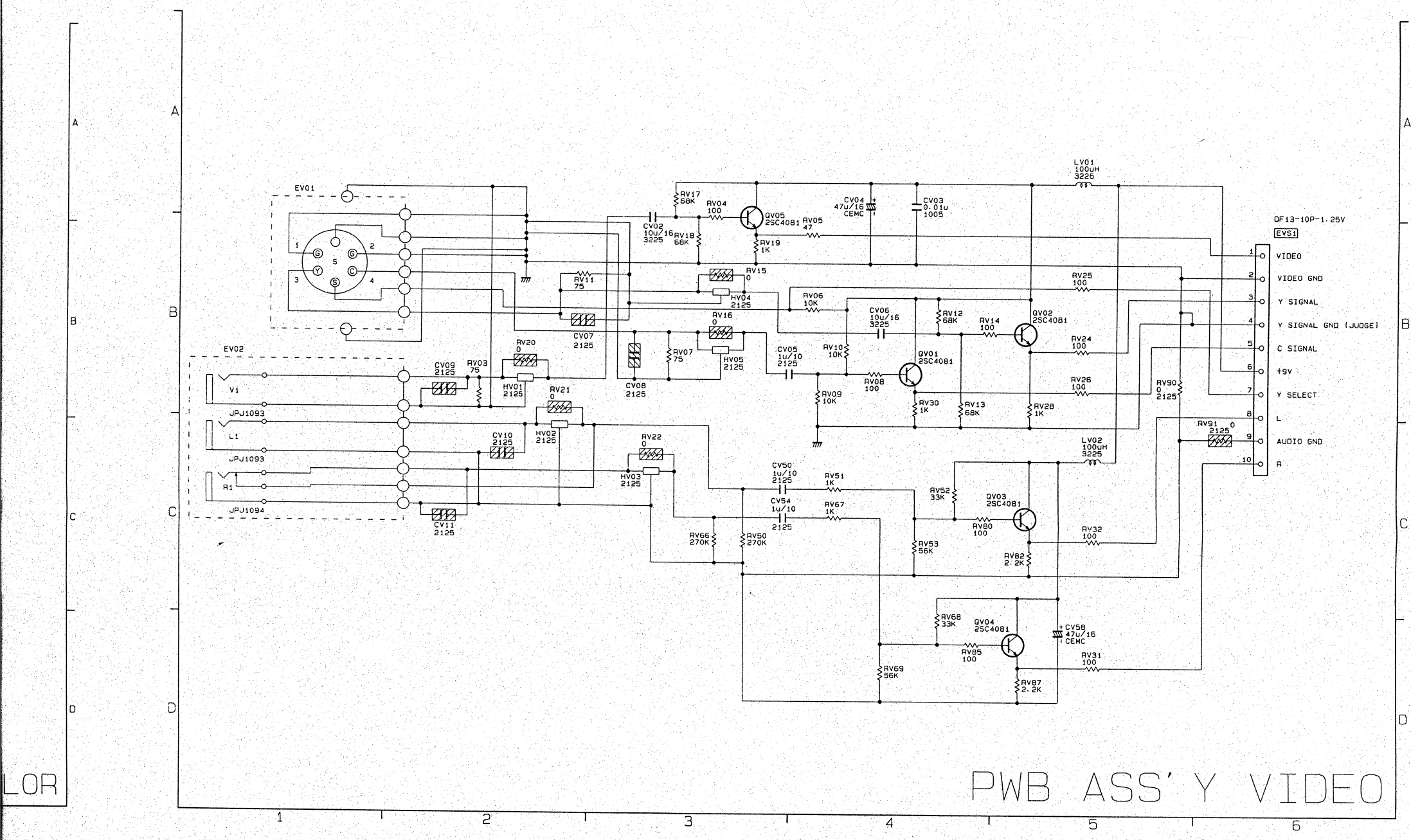
PWB ASS' Y SIGN

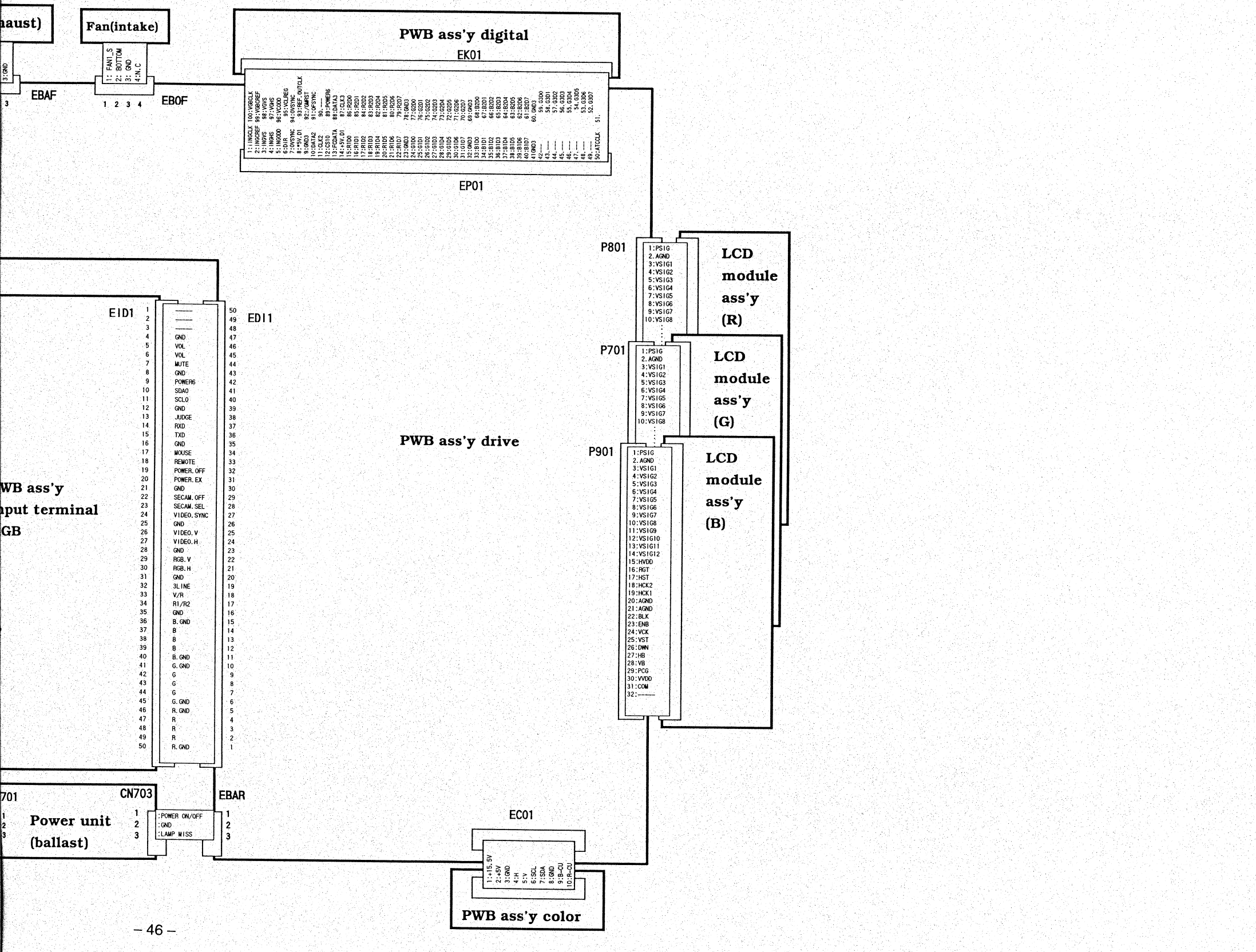

PWB ASS'Y SIGNAL
A
B
C
D
E
F
G
H
I
8
9
10
11
12
13
VIDEO.SYNC
SDAO
SCLO
3LINE
SECAMOFF
SECAMSEL
VIDEO.H
VIDEO.V
JUDGE
VIDEO.R
VIDEO.G
VIDEO.B
-8VS1
+8VS1
+5V.AD
POWER6
POWER.OFF
MUTE
VOL
V/R
P1/R2
PDW.EX
+5V.D1
+5V.D2
+5V.DA
+15V
+6.3V
FAN.GND
FAN.+12V
+5VST
-5VST
-6.3V
6.3V
VIDEO.V
VIDEO.H



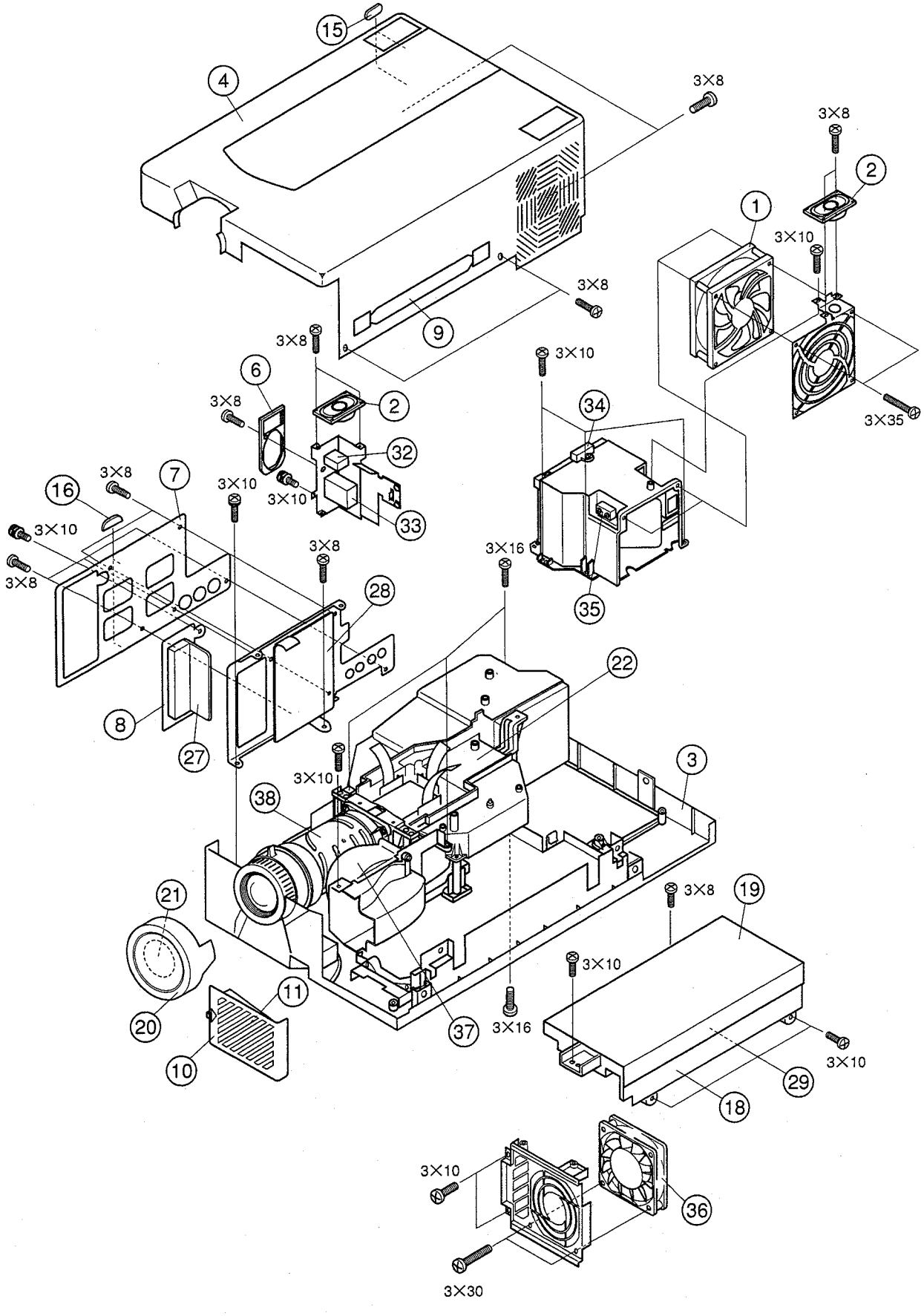
10. Connector connection diagram

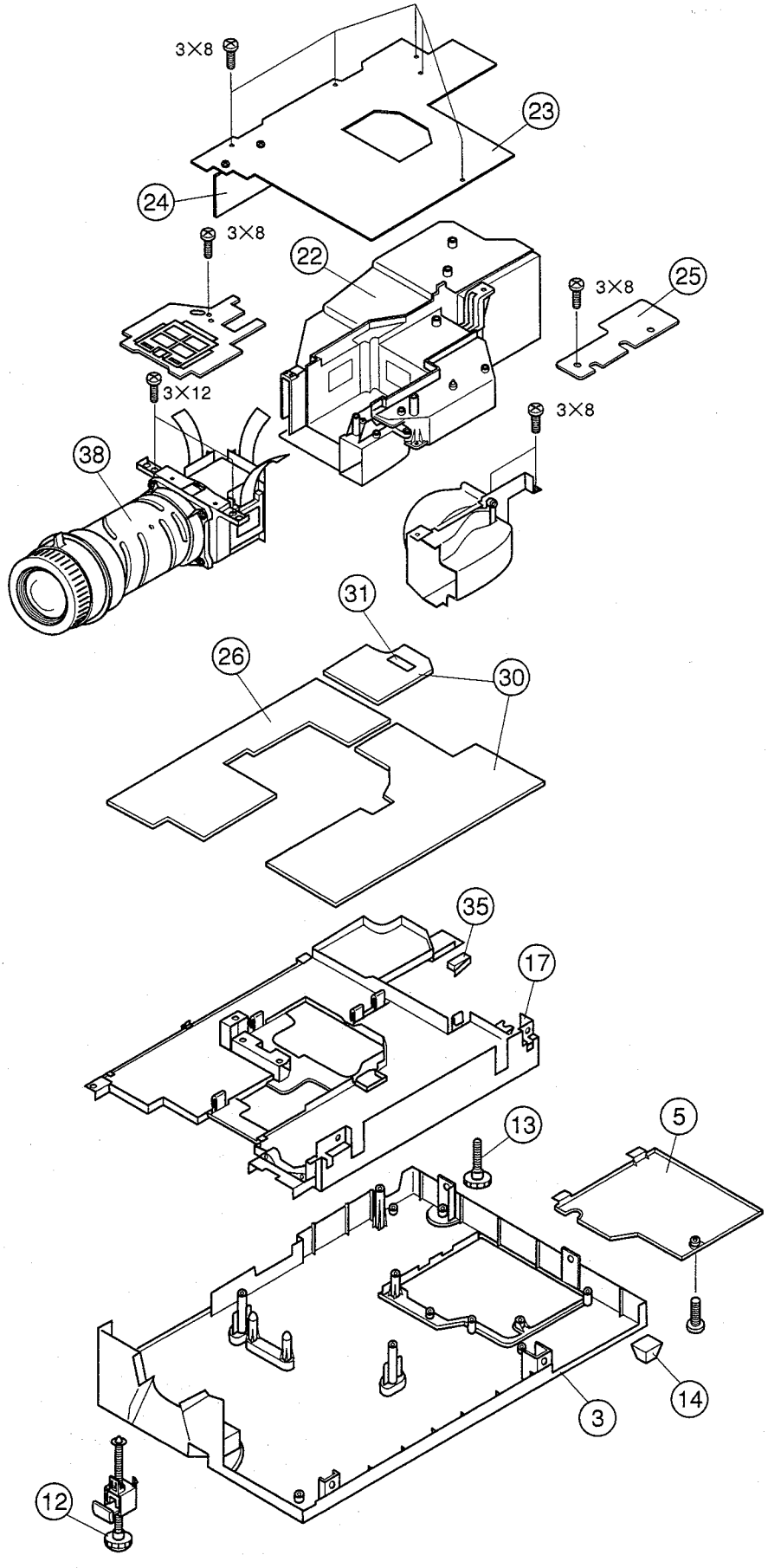



EV01
EV02
V1
JPJ1093
L1
JPJ1093
R1
JPJ1094
QV05 2SC4081
QV01 2SC4081
QV02 2SC4081
QV03 2SC4081
QV04 2SC4081
LV01 100uH 3225
LV02 100uH 3225
CV04 47u/16 CEMC
CV03 0.01u 1005
CV58 47u/16 CEMC
DF13-10P-1.25V
EVS1
1 VIDEO
2 VIDEO GND
3 Y SIGNAL
4 Y SIGNAL GND (JUDGE)
5 C SIGNAL
6 +9V
7 Y SELECT
8 L
9 AUDIO GND
10 R
PWB ASS'Y VIDEO


PWB ass'y digital
EK01
EP01
EBAF
EB0F
Fan(intake)
1: FAN1_S
2: BOTTOM
3: GND
4:N.C
EID1
EDI1
PWB ass'y drive
P801
P701
P901
LCD module ass'y (R)
LCD module ass'y (G)
LCD module ass'y (B)
CN703
EBAR
Power unit (ballast)
EC01
PWB ass'y color

11. Disassembly diagram




3X8
23
24
3X8
22
3X8
25
3X12
3X8
38
31
26
30
35
17
13
5
14
3
12

12. Replacement Parts list

PRODUCT SAFETY NOTE : Components marked with a ⚠ have special characteristics important to safety. Before replacing any of there components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL NO.	PARTS NO.	DESCRIPTION	SYMBOL NO.	PARTS NO.	DESCRIPTION
1	GS00361	DC FAN(EXHAUST)	26	JP03272	PWB ASS'Y SIGNAL
2	GK00562	SPEAKER	27	JP03273	PWB ASS'Y INPUT TERMINAL VIDEO
3	QD06772	BOTTOM CASE ASS'Y	28	JP03274	PWB ASS'Y INPUT TERMINAL RGB
4	QD07791	UPPER CASE ASS'Y	29	HA00481	POWER UNIT(BALLAST)
5	QD06802	LAMP COVER ASS'Y	30	HA00551	POWER UNIT(CIRCUIT)
6	PH06733	AC PANEL	31	2722447	FUSE 5A 250V
7	QD07212	I/O DECO PANEL	32	FG00141	POW SWITCH
8	PM08762	VIDEO PLATE	33	BZ02651	AC INLLET
9	PV00221	HANDLE	34	FU00252	THERMAL SENSOR SWITCH
10	PH06801	FILTER COVER	35	FH00161	LIMIT SWITCH (MICRO SWITCH)
11	MU00501	AIR FILTER	36	GS00232	DC FAN(POWER)
12	QJ00621	ADJUST FOOT	37	GS00371	DC FAN(INTAKE)
13	QJ00631	ADJUST REAR FOOT	38	UE05551	LCD/LENS PRISM ASS'Y
14	PE00111	RUBBER FOOT			
15	PE00094	LEG CUSHION R			
16	PE00121	LEG CUSHION		EV00341	POWER SUPPLY CORD (U.K.TYPE)
17	NJ03201	PWB HOLDER		EV00631	POWER SUPPLY CORD(UL/CSA TYPE 125V) (only CP-X935W)
18	NJ03211	BALAST HOLDER		EV00641	POWER SUPPLY CORD(CONTINENTAL TYPE)
19	MN02172	BALAST COVER		EW02733	SERIAL-2 MOUSE CABLE W/CORE
20	QD06811	LENS CAP		EW02743	ADB-2 MOUSE CABLE W/CORE
21	ME01771	CAP SHEET		EW02753	PS/2-2 MOUSE CABLE
22	UE05271	DICHROIC OPTICS UNIT		EW05015	RGB-D CABLE
23	JP03042B	PWB ASS'Y DRIVE		EW10933	CABLE.AV
24	JP03043	PWB ASS'Y DIGITAL		EY00362	APPLE MAC ADAPTER
25	JP03044	PWB ASS'Y CORRECTION COLOR		HL01114	REMOTE CONTROL UNIT

HITACHI

CP-X935W YK No. 0494E Information & Image Systems Division
CP-X935E Yokohama Operation

QR40291

Printed in Japan (M)

HITACHI

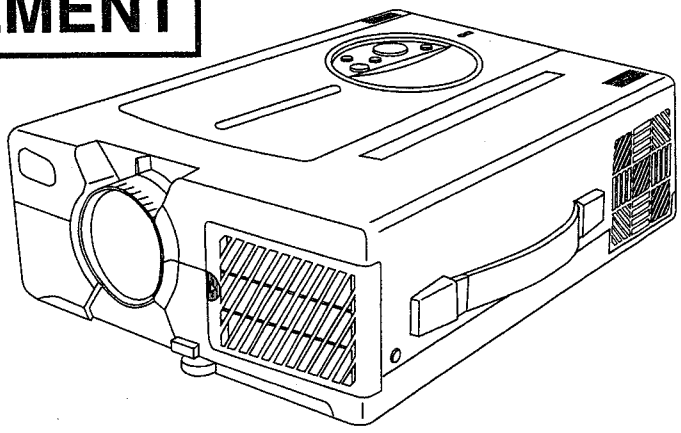
YK | No. 0494E-1

SERVICE MANUAL

CP-X935W
CP-X935E

123658

SUPPLEMENT



Note

In this manual, followings are modified. Compared with the original.

a) Adjustment procedure in color correction is simplified, and remark at adjustment is added.

b) In TROUBLE SHOOTING, flow charts are changed, and information on location of test pin is revised.

c) How to clean optical parts is added in SERVICE POINTS.

d) Replacement parts list is updated.

Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Hitachi liquid crystal projector. Be sure to read cautionary items described in the manual to maintain safety before servicing.

Service Warning

1. When replace the lamp, to avoid burns to your fingers. The lamp becomes too hot.
2. Never touch the lamp bulb with a finger or anything else. Never drop it or give it a shock. They may cause bursting of the bulb.
3. This projector is provided with a high voltage circuit for the lamp. Do not touch the electric parts of power unit (main), when turn on the projector.
4. Do not touch the exhaust fan, during operation.
5. The LCD module ass'y is likely to be damaged. If replacing to the LCD module ass'y, do not hold the FPC of the LCD module ass'y.

Contents

1. Adjustment ····· 2
2. Troubleshooting ····· 3
3. Service points ····· 10
4. Replacement parts list ····· 11

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

Liquid Crystal Projector

July 1999 Digital Media Systems Division

1. Adjustment

1 - 1 Adjustment menu

Remark : In adjustment procedure, parameters excluding "AIR-FLOW" in "DAC_P" (see fig 1.2.a) and only "GHOST" in "S/H" (see fig 1.2.b) are allowed to change.

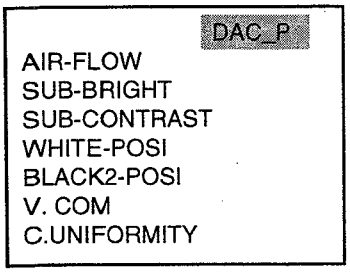


Fig 1.2.a Adjustment menu (DAC_P)

Fig 1.2.b Adjustment menu (S/H)

1 - 2 White balance adjustment

Adjustment Procedure

Adjustment of color uniformity

①Input gray pattern at 0.35Vpp with a timing signal of XGA VESA(60).

②Select "SWITCH OFF" in "C. UNIFORMITY" of the adjustment menu.

③Check the color uniformity of image.

④Continue this adjustment when color uniformity is not good.

⑤Select "SWITCH ON" in "C. UNIFORMITY" of the adjustment menu.

⑥Adjust following parameters for better color balance with same input signal.

a. Adjust "C. UNIFORMITY - H - R -RP" so that color balance of left and right side is best,....visual check.
This is control correction wave for Horizontal Saw.

b. Adjust "C. UNIFORMITY - H - R -PB" so that color balance of center and side is best,....visual check.
This is control correction wave for Horizontal Parabola.

c. Adjust "C. UNIFORMITY - H - B -RP" so that color balance of left and right side is best,....visual check.
This is control correction wave for Horizontal Saw.

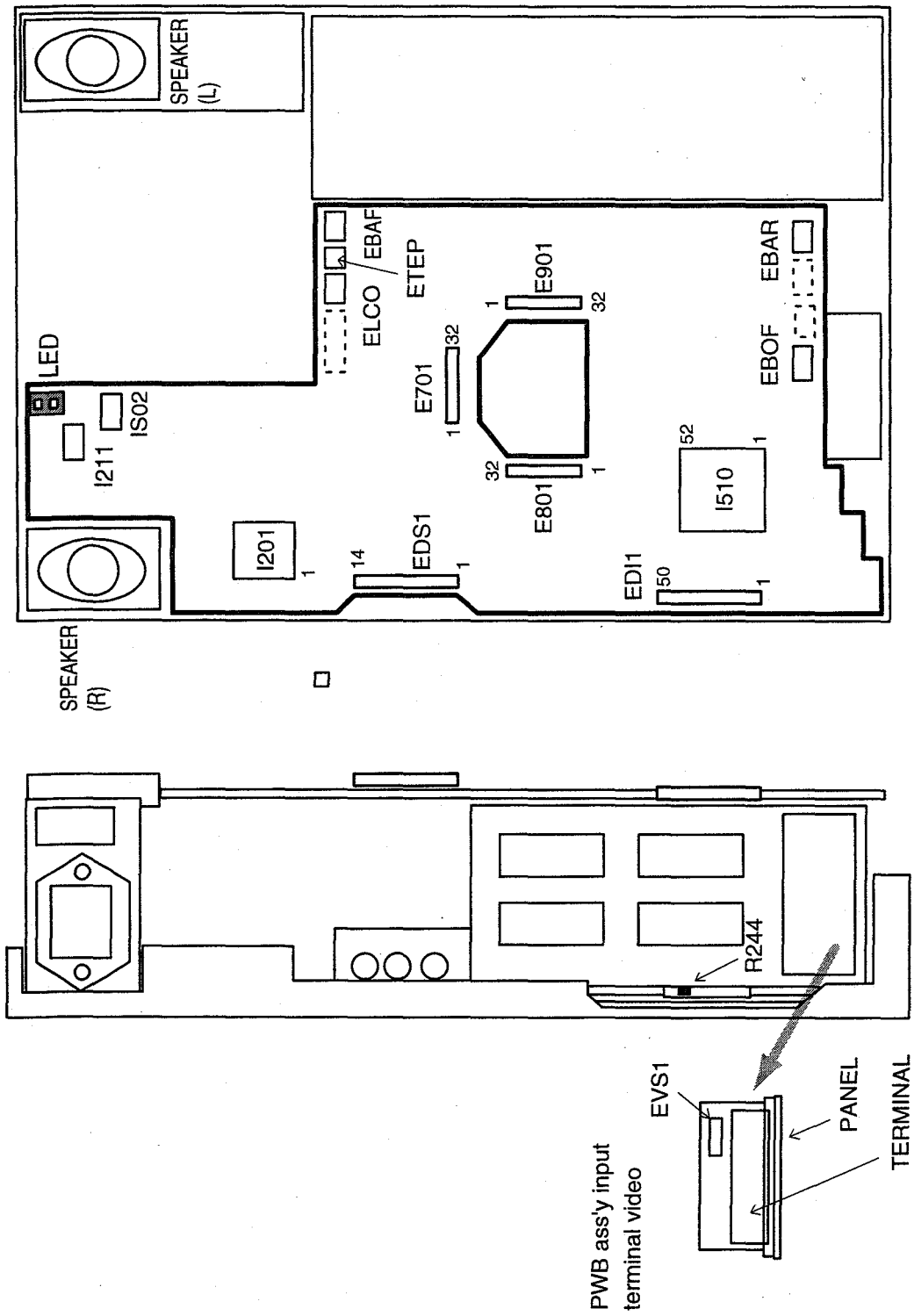
d. Adjust "C. UNIFORMITY - H - B -PB" so that color balance of center and side is best,....visual check.
This is control correction wave for Horizontal Parabola.

e. Adjust "C. UNIFORMITY - V - B -RP" so that color balance of top and bottom is best,....visual check.
This is control correction wave for Vertical Saw.

"C. UNIFORMITY - H - R -RP"
: horizontal correction for R horizontal Saw
"C. UNIFORMITY - H - R -PB"
: horizontal correction for R horizontal Parabola
"C. UNIFORMITY - H - B -RP"
: horizontal correction for B horizontal Saw
"C. UNIFORMITY - H - B -PR"
: horizontal correction for B horizontal Parabola
"C. UNIFORMITY - V - B -RP"
: vertical correction for B vertical Saw

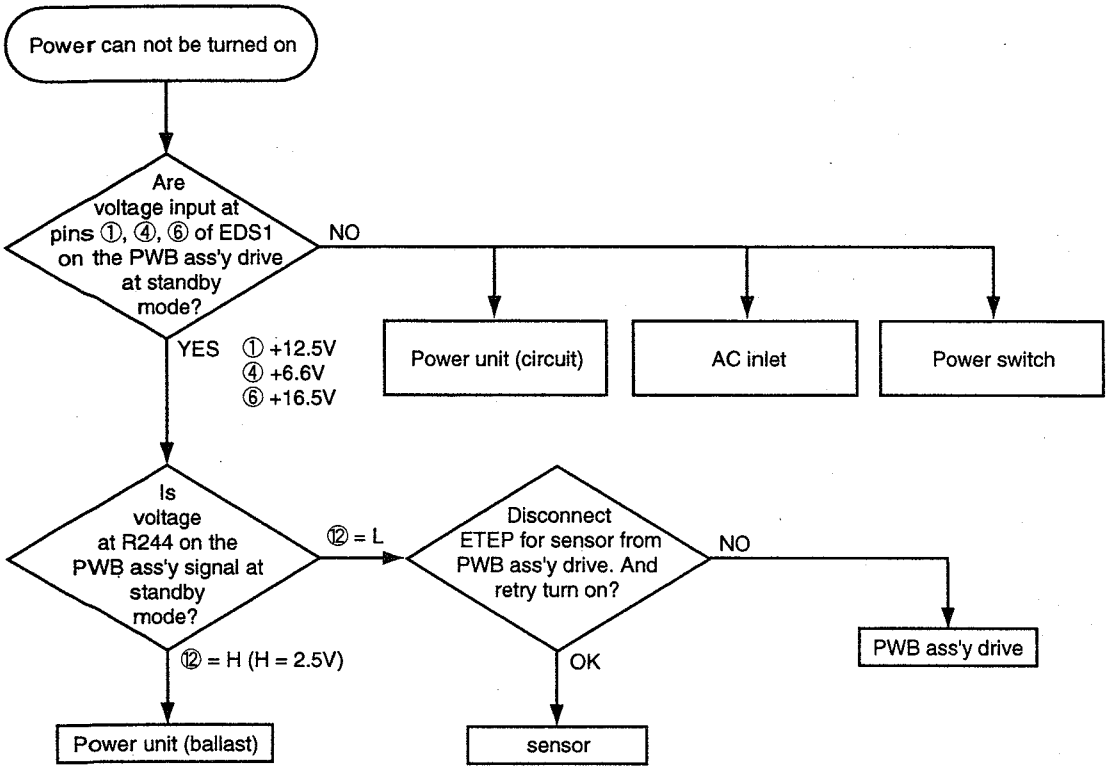
2. Troubleshooting

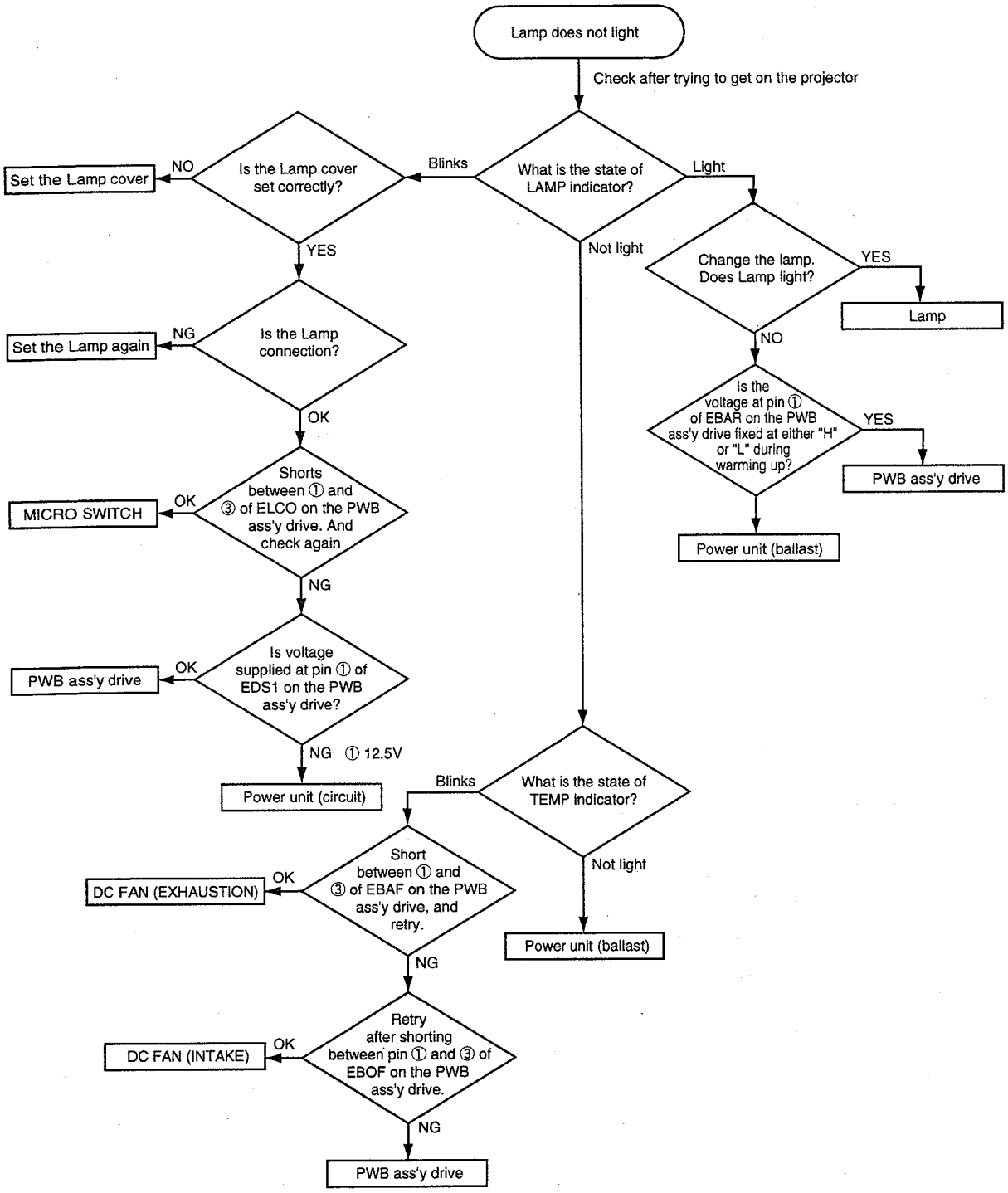
Check points at trouble shooting

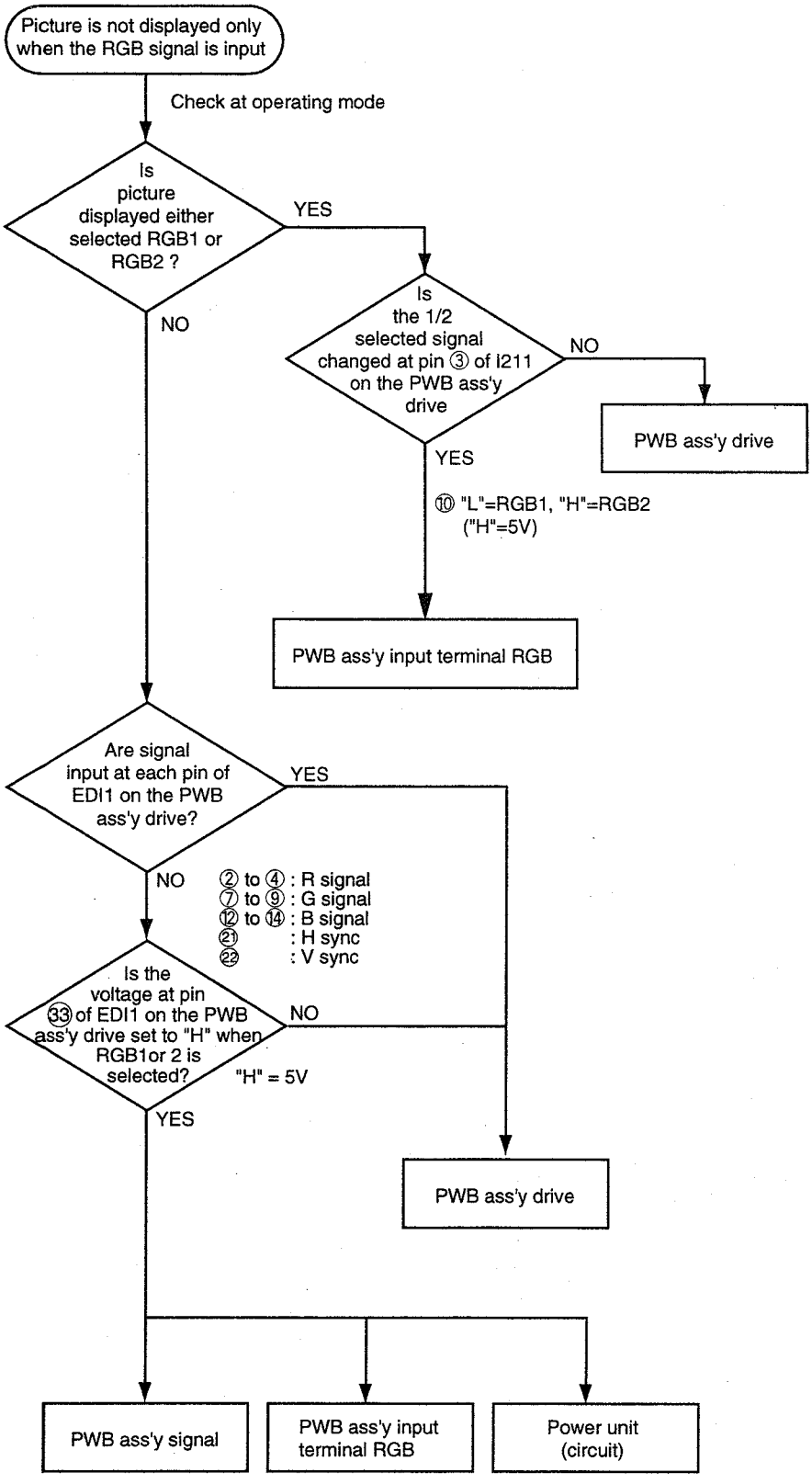


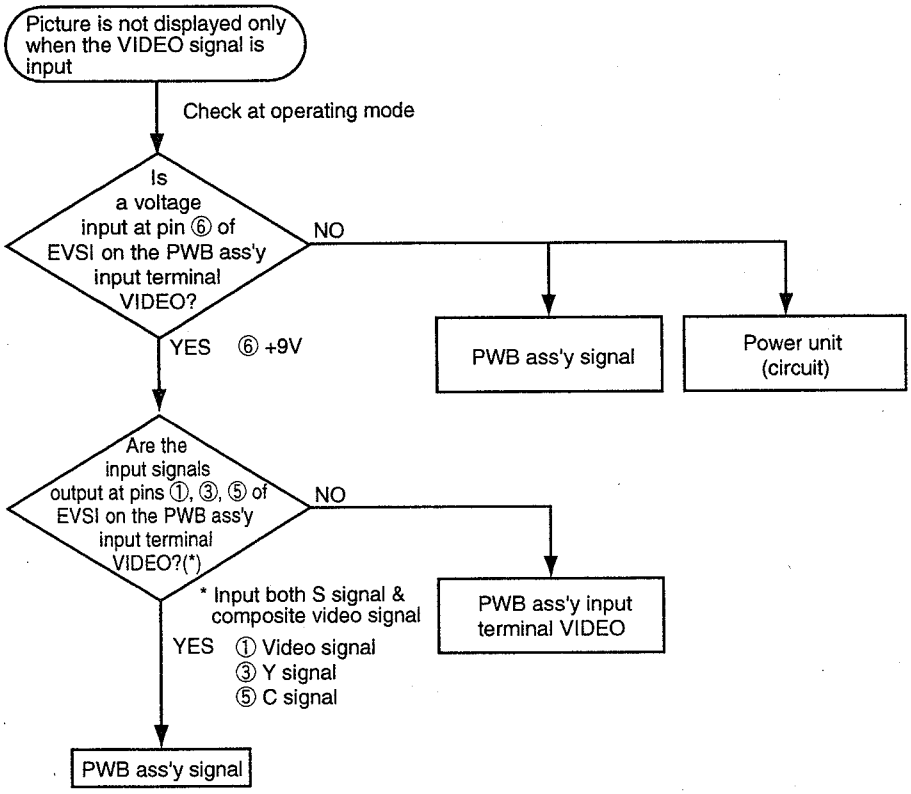
<TOP VIEW>
without upper case

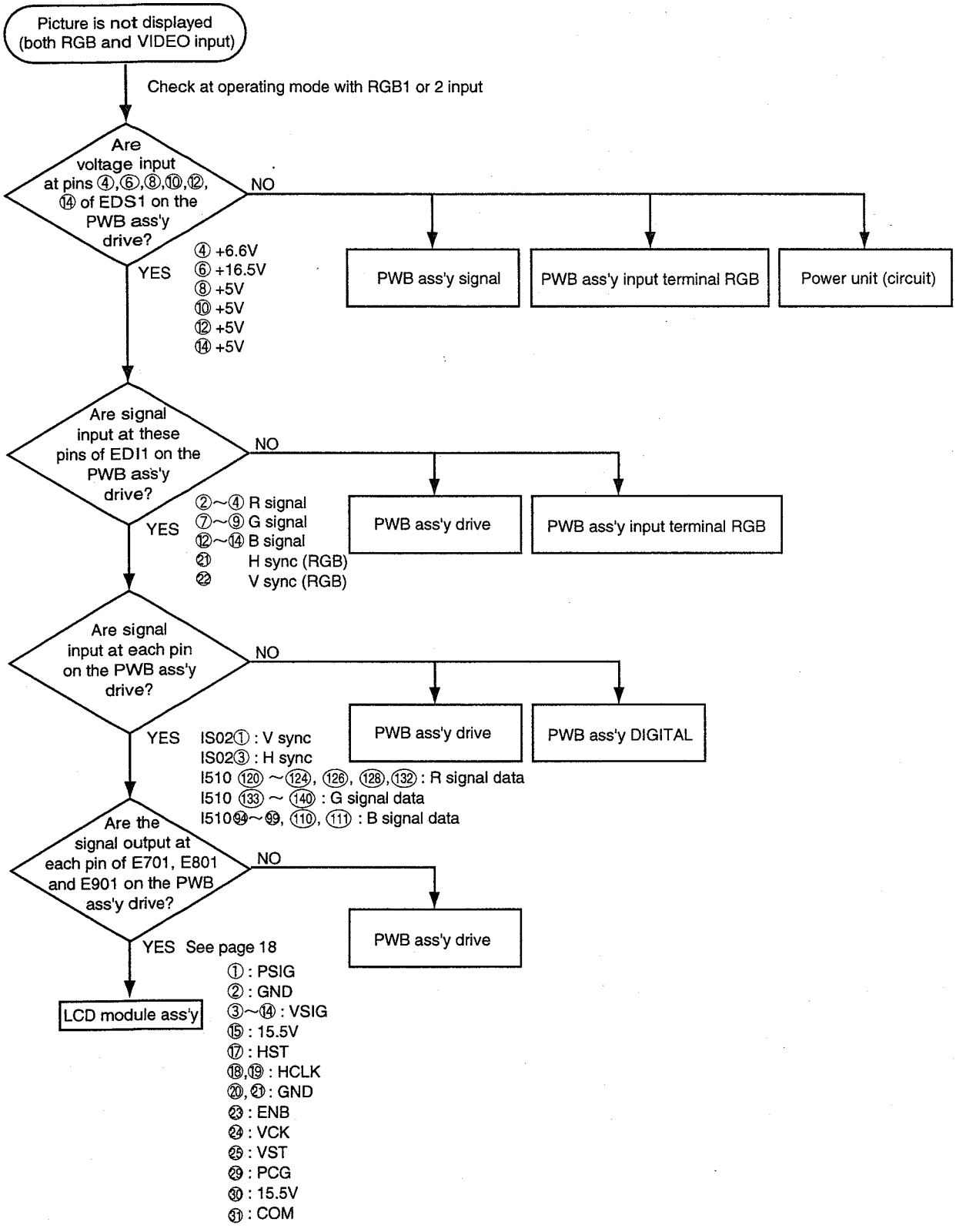
<SIDE VIEW>
without upper case & I/O DECO PANEL

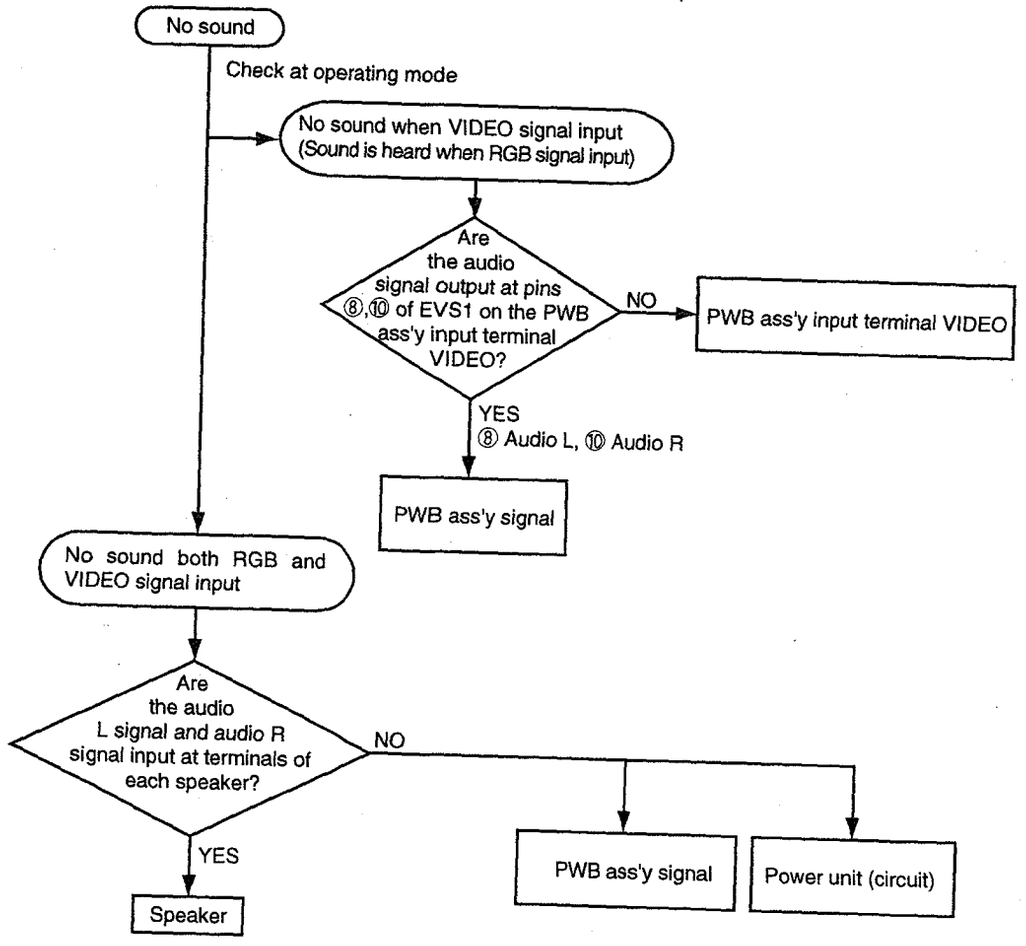

Power can not be turned on
Are voltage input at pins ①, ④, ⑥ of EDS1 on the PWB ass'y drive at standby mode?
NO
YES ① +12.5V ④ +6.6V ⑥ +16.5V
Power unit (circuit)
AC inlet
Power switch
Is voltage at R244 on the PWB ass'y signal at standby mode?
⑫ = L
Disconnect ETEP for sensor from PWB ass'y drive. And retry turn on?
NO
PWB ass'y drive
⑫ = H (H = 2.5V)
OK
Power unit (ballast)
sensor

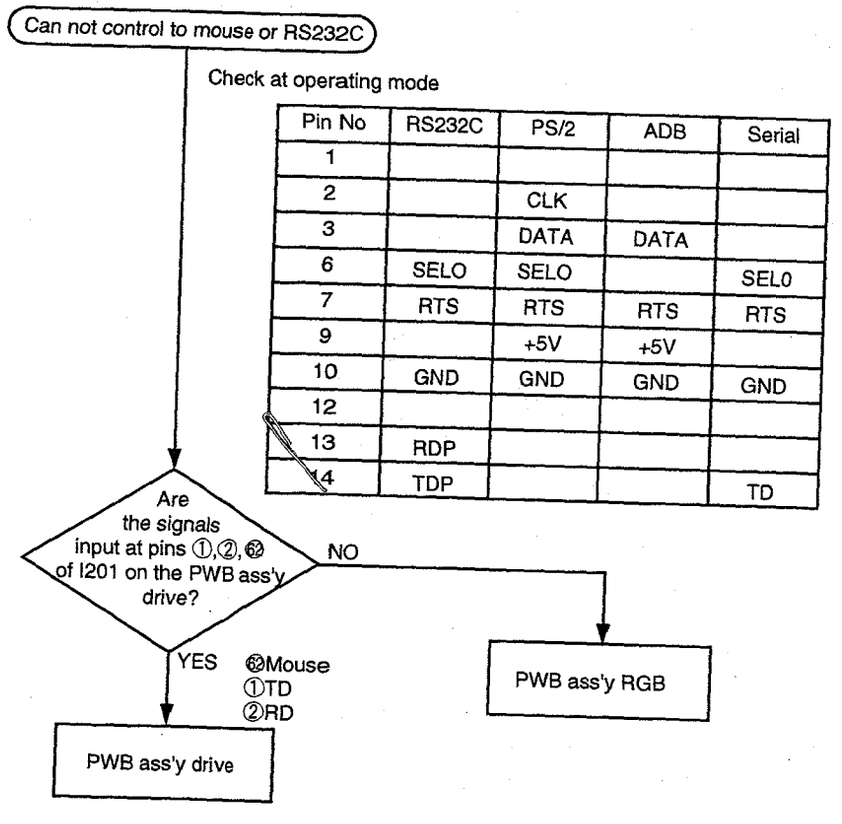

Lamp does not light
Check after trying to get on the projector
What is the state of LAMP indicator?
Blinks
Light
Not light
Is the Lamp cover set correctly?
NO
Set the Lamp cover
YES
Is the Lamp connection?
NG
Set the Lamp again
OK
Shorts between ① and ③ of ELCO on the PWB ass'y drive. And check again
OK
MICRO SWITCH
NG
Is voltage supplied at pin ① of EDS1 on the PWB ass'y drive?
OK
PWB ass'y drive
NG ① 12.5V
Power unit (circuit)
Change the lamp. Does Lamp light?
YES
Lamp
NO
Is the voltage at pin ① of EBAR on the PWB ass'y drive fixed at either "H" or "L" during warming up?
YES
PWB ass'y drive
Power unit (ballast)
What is the state of TEMP indicator?
Blinks
Not light
Short between ① and ③ of EBAF on the PWB ass'y drive, and retry.
OK
DC FAN (EXHAUSTION)
NG
Retry after shorting between pin ① and ③ of EBOF on the PWB ass'y drive.
OK
DC FAN (INTAKE)
NG
PWB ass'y drive
Power unit (ballast)


Picture is not displayed only when the RGB signal is input
Check at operating mode
Is picture displayed either selected RGB1 or RGB2 ?
YES
NO
Is the 1/2 selected signal changed at pin ③ of I211 on the PWB ass'y drive
NO
PWB ass'y drive
YES
⑩ "L"=RGB1, "H"=RGB2 ("H"=5V)
PWB ass'y input terminal RGB
Are signal input at each pin of EDI1 on the PWB ass'y drive?
YES
NO
② to ④ : R signal
⑦ to ⑨ : G signal
⑫ to ⑭ : B signal
㉑ : H sync
㉒ : V sync
Is the voltage at pin ㉝ of EDI1 on the PWB ass'y drive set to "H" when RGB1or 2 is selected?
NO
"H" = 5V
YES
PWB ass'y drive
PWB ass'y signal
PWB ass'y input terminal RGB
Power unit (circuit)


Picture is not displayed only when the VIDEO signal is input
Check at operating mode
Is a voltage input at pin ⑥ of EVSI on the PWB ass'y input terminal VIDEO?
NO
YES ⑥ +9V
PWB ass'y signal
Power unit (circuit)
Are the input signals output at pins ①, ③, ⑤ of EVSI on the PWB ass'y input terminal VIDEO?(*)
NO
* Input both S signal & composite video signal
YES ① Video signal
③ Y signal
⑤ C signal
PWB ass'y input terminal VIDEO
PWB ass'y signal


Picture is not displayed (both RGB and VIDEO input)
Check at operating mode with RGB1 or 2 input
Are voltage input at pins ④,⑥,⑧,⑩,⑫, ⑭ of EDS1 on the PWB ass'y drive?
NO
YES
④ +6.6V
⑥ +16.5V
⑧ +5V
⑩ +5V
⑫ +5V
⑭ +5V
PWB ass'y signal
PWB ass'y input terminal RGB
Power unit (circuit)
Are signal input at these pins of EDI1 on the PWB ass'y drive?
NO
YES
②~④ R signal
⑦~⑨ G signal
⑫~⑭ B signal
㉑ H sync (RGB)
㉒ V sync (RGB)
PWB ass'y drive
PWB ass'y input terminal RGB
Are signal input at each pin on the PWB ass'y drive?
NO
YES
IS02① : V sync
IS02③ : H sync
I510 ⑫⓪ ~⑫④, ⑫⑥, ⑫⑧, ⑬② : R signal data
I510 ⑬③ ~ ⑭⓪ : G signal data
I510 ⑨④~⑨⑨, ⑪⓪, ⑪① : B signal data
PWB ass'y drive
PWB ass'y DIGITAL
Are the signal output at each pin of E701, E801 and E901 on the PWB ass'y drive?
NO
YES See page 18
① : PSIG
② : GND
③~⑭ : VSIG
⑮ : 15.5V
⑰ : HST
⑱,⑲ : HCLK
⑳, ㉑ : GND
㉓ : ENB
㉔ : VCK
㉕ : VST
㉙ : PCG
㉚ : 15.5V
㉛ : COM
PWB ass'y drive
LCD module ass'y


No sound
Check at operating mode
No sound when VIDEO signal input
(Sound is heard when RGB signal input)
Are the audio signal output at pins ⑧,⑩ of EVS1 on the PWB ass'y input terminal VIDEO?
NO
PWB ass'y input terminal VIDEO
YES
⑧ Audio L, ⑩ Audio R
PWB ass'y signal
No sound both RGB and VIDEO signal input
Are the audio L signal and audio R signal input at terminals of each speaker?
NO
YES
Speaker
PWB ass'y signal
Power unit (circuit)



Pin No	RS232C	PS/2	ADB	Serial
1				
2		CLK		
3		DATA	DATA	
6	SELO	SELO		SEL0
7	RTS	RTS	RTS	RTS
9		+5V	+5V	
10	GND	GND	GND	GND
12				
13	RDP			
14	TDP			TD

3. Service points

● Dust cleaning

(1) Check dust condition

1. Show the white picture on the screen (whose size is 60") to check dust condition.
2. If dust condition is not good, should be clean the LCD module ass'y, the Multilenses and the Air filter.

(2) Clean the LCD module ass'y. (Don't remove the LCD ass'y from LCD/LENS PRISM ASS'Y.)

1. Blow the air on the LCD module by Dust blower. (See Fig.3-1)
2. If dusts are still on, wipe it with the special glass cleaning cloth.
3. Check dust condition.

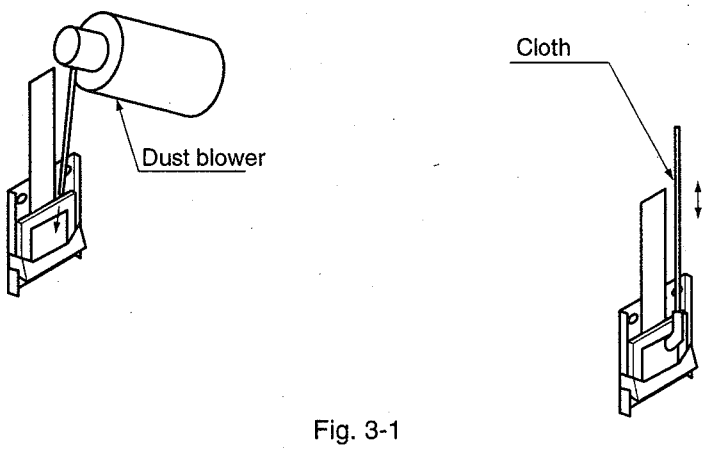


Fig. 3-1

(3) Clean Relay lens

1. If dust condition is not good still, remove the tape from Dichroic optics unit. Blow the air Relay lens by Dust blower. (See Fig.3-2)
2. If dusts are still on, wipe them with the special glass cleaning cloth.
3. Check dust condition.

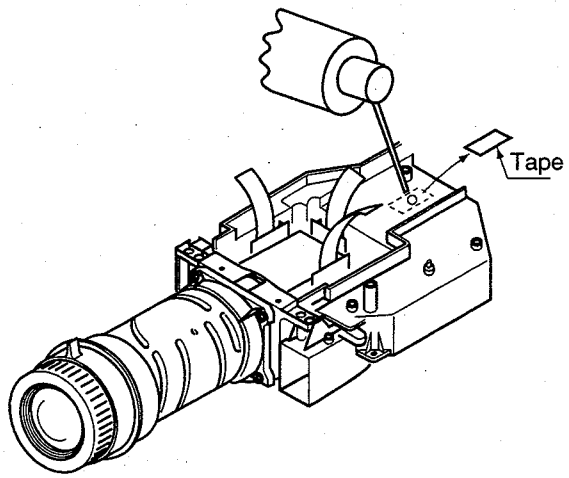


Fig. 3-2

(4) Clean the Air filter

1. Remove the air filter from the front of the projector.
2. Wipe the air filter with a cloth moistened with water or neutral detergent, and wipe with a dry cloth.

4. Replacement Parts list

PRODUCT SAFETY NOTE : Components marked with a ⚠ have special characteristics important to safety. Before replacing any of there components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL NO.	PARTS NO.	DESCRIPTION	SYMBOL NO.	PARTS NO.	DESCRIPTION
1	GS00361	DC FAN(EXHAUST)	26	JP03272	PWB ASS'Y SIGNAL
2	GK00562	SPEAKER	27	JP03273	PWB ASS'Y INPUT TERMINAL VIDEO
3	QD06772	BOTTOM CASE ASS'Y	28	JP03274	PWB ASS'Y INPUT TERMINAL RGB
4	QD07791	UPPER CASE ASS'Y	29	HA00481	POWER UNIT(BALLAST)
5	QD06802	LAMP COVER ASS'Y	30	HA00553	POWER UNIT(CIRCUIT)
6	PH06733	AC PANEL	31	2722447	FUSE 5A 250V
7	QD07212	I/O DECO PANEL	32	FG00141	POW SWITCH
8	PM08762	VIDEO PLATE	33	BZ02652	AC INLLET
9	PV00221	HANDLE	34	FU00252	THERMAL SENSOR SWITCH
10	PH06801	FILTER COVER	35	FH00161	LIMIT SWITCH (MICRO SWITCH)
11	MU00501	AIR FILTER	36	GS00232	DC FAN(POWER)
12	QJ00621	ADJUST FOOT	37	GS00371	DC FAN(INTAKE)
13	QJ00631	ADJUST REAR FOOT	38	UX06161	LCD/LENS PRISM ASS'Y
14	PE00111	RUBBER FOOT			
15	PE00094	LEG CUSHION R			
16	PE00121	LEG CUSHION		EV00341	POWER SUPPLY CORD (U.K.TYPE)
17	NJ03201	PWB HOLDER		EV00631	POWER SUPPLY CORD(UL/CSA TYPE 125V) (only CP-X935W)
18	NJ03211	BALAST HOLDER		EV00641	POWER SUPPLY CORD(CONTINENTAL TYPE)
19	MN02172	BALAST COVER		EW02733	SERIAL-2 MOUSE CABLE W/CORE
20	QD06811	LENS CAP		EW02743	ADB-2 MOUSE CABLE W/CORE
21	ME01771	CAP SHEET		EW02753	PS/2-2 MOUSE CABLE
22	UE05271	DICHROIC OPTICS UNIT		EW05015	RGB-D CABLE
23	JP03042B	PWB ASS'Y DRIVE		EW10933	CABLE.AV
24	JP03043	PWB ASS'Y DIGITAL		EY00362	APPLE MAC ADAPTER
25	JP03044	PWB ASS'Y CORRECTION COLOR		HL01114	REMOTE CONTROL UNIT

HITACHI

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CP-X935E

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